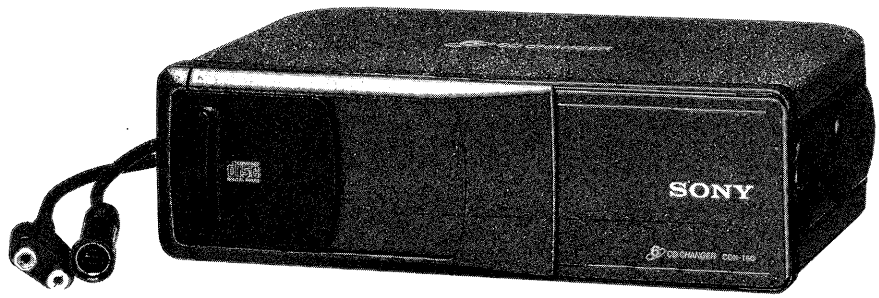
CDX-T60

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	KSS-402A

SPECIFICATIONS

System — Compact disc digital audio system
Frequency response — 5 – 20,000 Hz
Wow and flutter — Below measurable limit
Signal-to-noise ratio — 95 dB
Outputs — BUS control output (8 PIN)
Analog audio output (RCA PIN)
Current drain — 800 mA (CD playback)
800 mA (during loading or ejecting a disc)
Operating temperature — −10 °C to 55 °C
Dimensions — Approx. 225 × 68 × 158 mm (w/h/d)
not incl. projecting parts and controls
Mass — Approx. 1.5 kg
Power requirement — 12 V DC car battery (negative ground)
Supplied accessories
Disc magazine (1)
Mounting hardware (1 set)
BUS cable (1)
RCA pin cord (1)

Design and specifications subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

COMPACT DISC CHANGER

SONY®

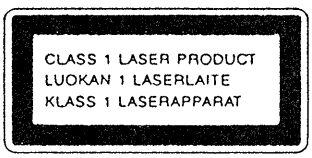
Features

- Sony BUS system compatible mobile CD changer.
- In addition to conventional horizontal, vertical, or suspended installation, allowing a wide variety of mounting positions in the passenger's cabin.
- 8 fs digital filter for high quality sound.
- 1 bit D/A converter.
- Program memory function* for preselecting your favorite tracks from the discs in the changer, and playing them back in the order you want to hear them.
  * *Only available when connected to a main unit having the program memory function.*
- Custom file function* for custom naming and displaying the title of each disc.
  * *Only available when connected to a main unit having the custom file function.*

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Precautions

Moisture condensation

On a rainy day or in a very damp area, moisture may condense on the lenses inside the unit. Should this occur, the unit will not operate properly. In this case, remove the disc and wait for about an hour until the moisture has evaporated.

Notes on the Disc Magazine

- Do not leave the disc magazine in locations with high-temperatures and high-humidity, such as on a car dashboard or at the rear window where the disc magazine will be subjected to direct sunlight.
- Do not insert more than one disc at a time into one slot, otherwise the changer and the discs may be damaged.
- Do not drop the disc magazine or subject it to a violent shock.

Inserting a Disc

Do not put your hand into the changer, you may get injured.

If the disc magazine does not lock properly

Take out the magazine, and after pressing the EJECT button, reinsert it.

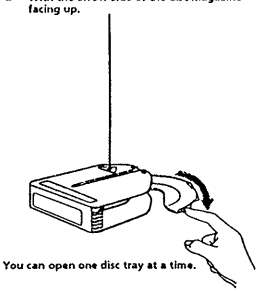
Use the unit with the door closed

Otherwise, foreign matter may enter the unit and contaminate the lenses inside the changer.

1 With the arrow side of the disc magazine facing up.

Note

To prevent discs from falling out and possibly becoming damaged, the disc trays can not be opened when the disc magazine is up-side down. Furthermore, you can not open two or more disc trays at the same time.

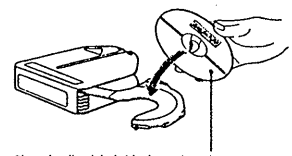


You can open one disc tray at a time.

2

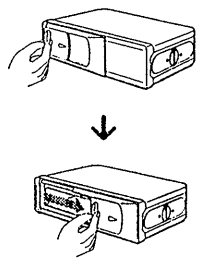
Notes

- *To listen to an 8 cm (3-in.) CD, use the separately sold Sony CD adapter CSA-8. Be sure to always use the specified adapter, as failing to do so may cause a malfunction of the unit. If you use any other adapter, the unit may not operate properly. When using the sony CD adapter, make sure that the three catches on the adapter are firmly latched onto the 8 cm CD.*
- *Do not operate the unit with only the Sony CD adapter CSA-8 in the magazine; malfunction may result.*

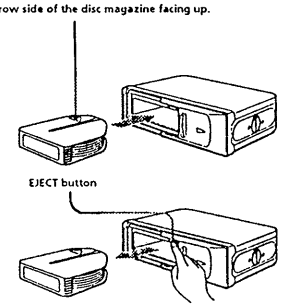


Place the disc, label side down, into the tray.

3



4 With the arrow side of the disc magazine facing up.



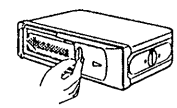
To remove

EJECT button

5

Note

When a disc magazine is inserted into the CD changer or the reset button of the connected car audio is pressed, the unit will be automatically activated and read the information of the CDs. When the information of all the CDs in the disc magazine has been read, the unit will automatically stop the operation.



Notes on Compact Discs

This way

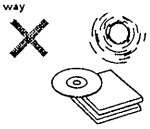
A dirty or defective disc may cause sound drop-outs during playback. To enjoy optimum sound, handle the disc as follows.

Handle the disc by its edge, and to keep the disc clean, do not touch the surface which has no label.

Not this way

Do not stick paper or tape on the labeled surface.

Not this way



Do not expose the discs to direct sunlight or heat sources such as hot air-ducts, or do not leave it in a car parked in direct sunlight where there can be a considerable rise in the temperature inside the car.

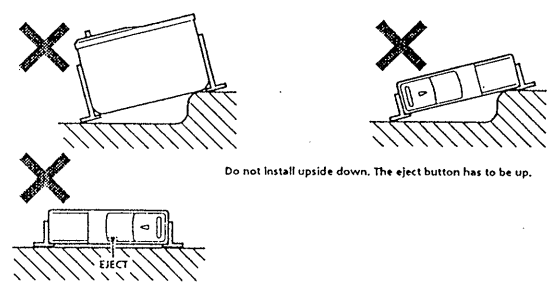
Before playing, clean the discs with an optional cleaning cloth. Wipe each disc in the direction of the arrows.

Do not use solvents such as benzine, thinner, commercially available cleaners or antistatic spray intended for analog discs.

Precautions

- Choose the mounting location carefully, observing the following:
  - Unit not subject to temperatures exceeding 55 °C (131 °F) (such as in a car parked in direct sunlight).
  - Unit not subject to direct sunlight.
  - Unit not near heat sources (such as heaters).
  - Unit not exposed to rain or moisture.
  - Unit not exposed to excessive dust or dirt.
  - Unit not subject to excessive vibration.
  - The fuel tank should not be damaged by the tapping screws.
  - There should be no wire harnesses or pipes under the place where you are going to install the unit.
  - The spare tire, tools or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.
- Use velcro ⓔ for temporary installation only. Before attaching the velcro, clean the surface it is attached to.
- Use only the supplied screws.

Do not make an inclined installation such as shown below.



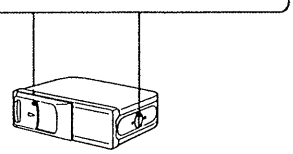
Do not install upside down. The eject button has to be up.

How to Install the Unit

Horizontal installation (Be sure to install so that the EJECT button is up.)

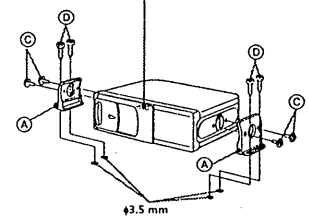
1

With a coin or something similar, turn the dial so that the arrow is vertical with respect to the ground.



2

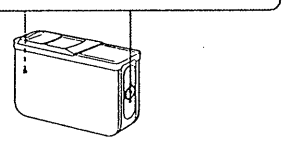
Install so that the EJECT button is up.



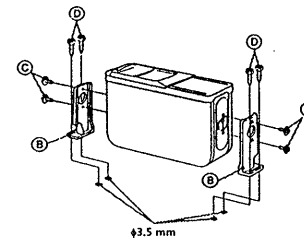
Vertical installation

1

With a coin or something similar, turn the dial so that the arrow is vertical with respect to the ground.



2

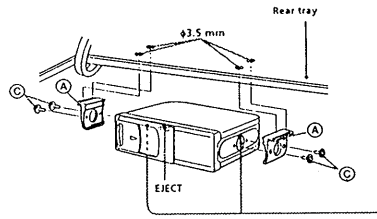


Suspended installation (Be sure to install so that the EJECT button is up.)

When the unit is to be installed under the rear tray etc. in the trunk room, be sure to make following provisions are made.

- Choose the mounting location carefully so that the unit can be installed horizontally.
- Make sure that the unit does not hinder the movement of the torsion bar spring etc. of the trunk lid.
- Do not use parts Ⓑ.

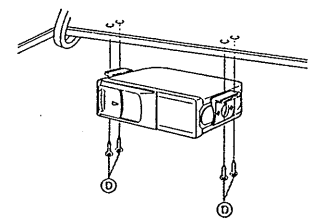
1



Install so that the EJECT button is up.

With a coin or something similar, turn the dial so that the arrow is vertical with respect to the ground.

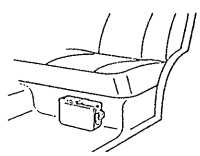
2



In-cabin Installation

In some cars it is also possible to install the unit for instance under the rear seats or to other locations in the passenger's cabin.

For example

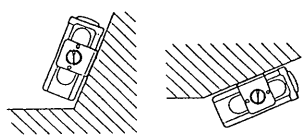


For In-cabin Installation, mind the following:

- *Before installing, confirm unimpeded movement of the disc magazine and smooth operation of the EJECT button.*
- *Make sure that no water or foreign matter enters the changer.*
- *Do not apply excessive pressure onto the unit, and handle it carefully.*

Inclined installation

Five marks are above the left and right dials. After installing the unit, align the dials so with one of the marks that the arrows are as vertical as possible.

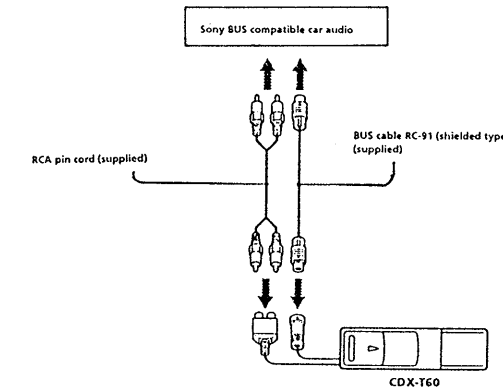


Note

Be sure to align the left and right dials with the same mark.

Connections

For details, refer to the Installation/Connections manual of the car audio.



The cords from the changer can be moved to some extent.

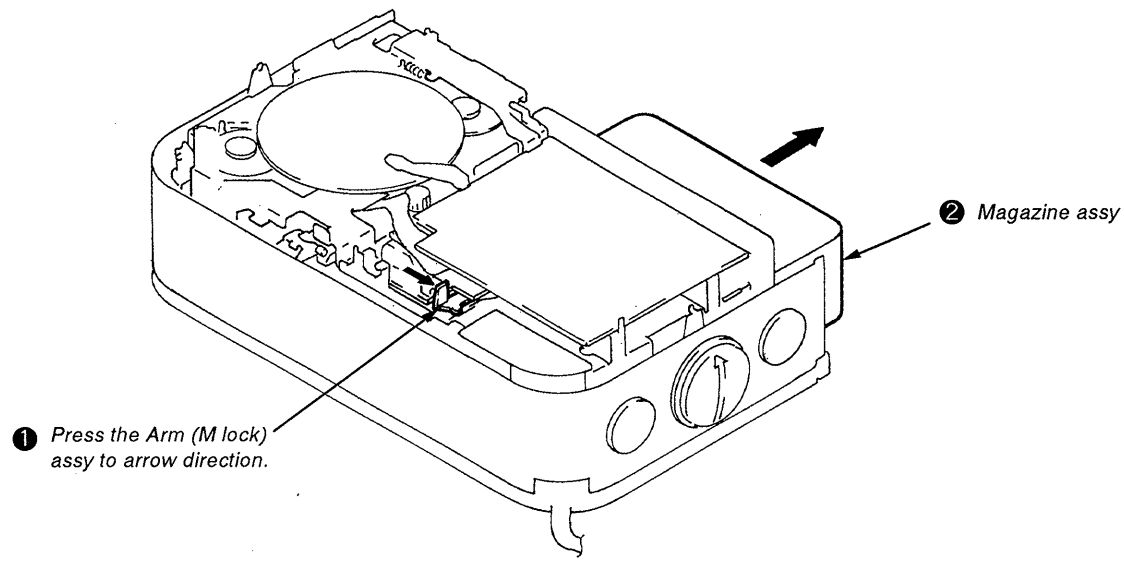
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

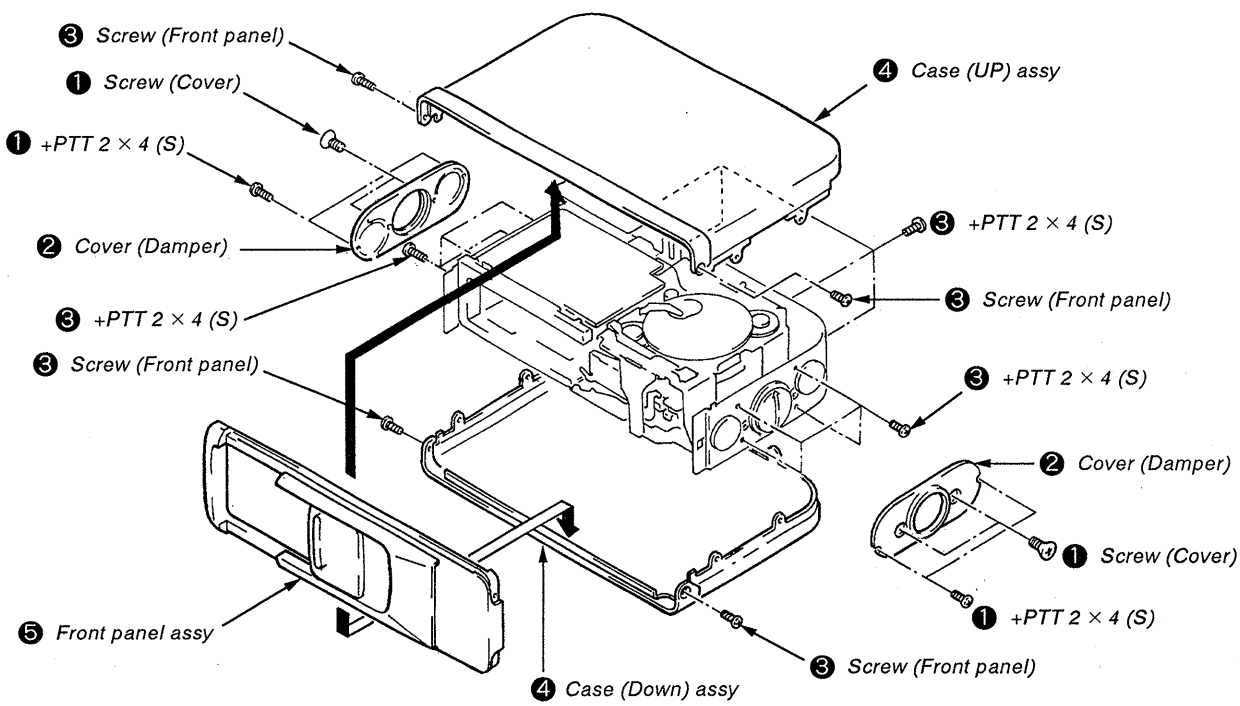
2-1. DISC MAGAZINE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF

Note : Take out the magazine only when the tray is completely within the magazine.
If the disk or tray is sticking out, turn on the power and eject the magazine.

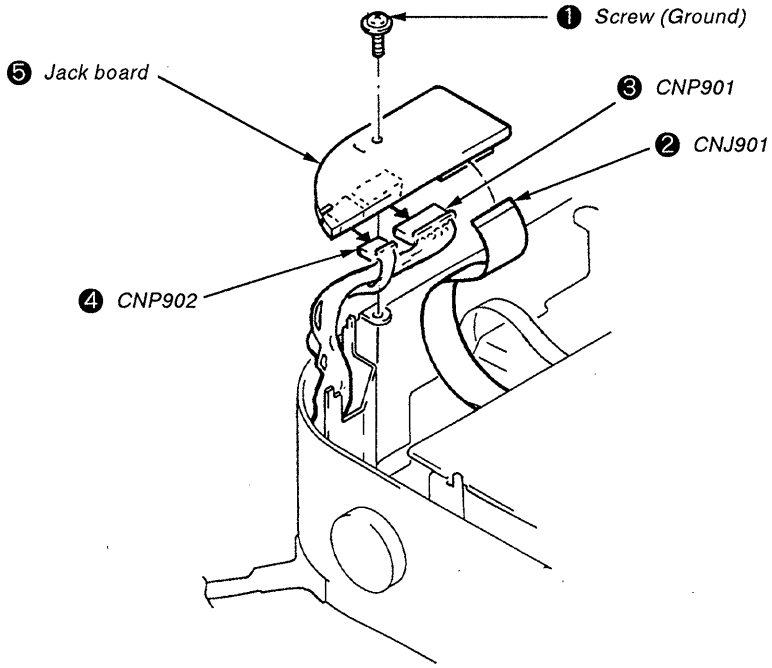
Remove the CASE (UP) assembly beforehand



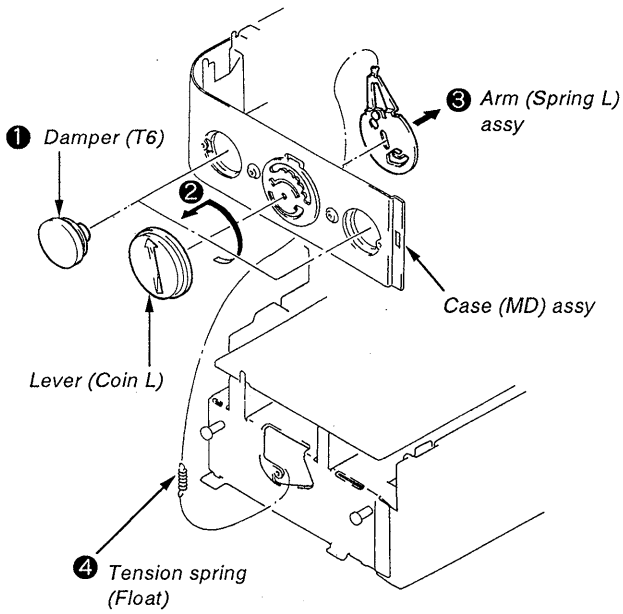
2-2. FRONT PANEL ASSY, CASE (UP) ASSY, CASE (DOWN) ASSY, COVER (DAMPER)


❸ Screw (Front panel)
❶ Screw (Cover)
❶ +PTT 2 × 4 (S)
❷ Cover (Damper)
❸ +PTT 2 × 4 (S)
❸ Screw (Front panel)
❺ Front panel assy
❹ Case (UP) assy
❸ +PTT 2 × 4 (S)
❸ Screw (Front panel)
❸ +PTT 2 × 4 (S)
❷ Cover (Damper)
❶ Screw (Cover)
❶ +PTT 2 × 4 (S)
❸ Screw (Front panel)
❹ Case (Down) assy

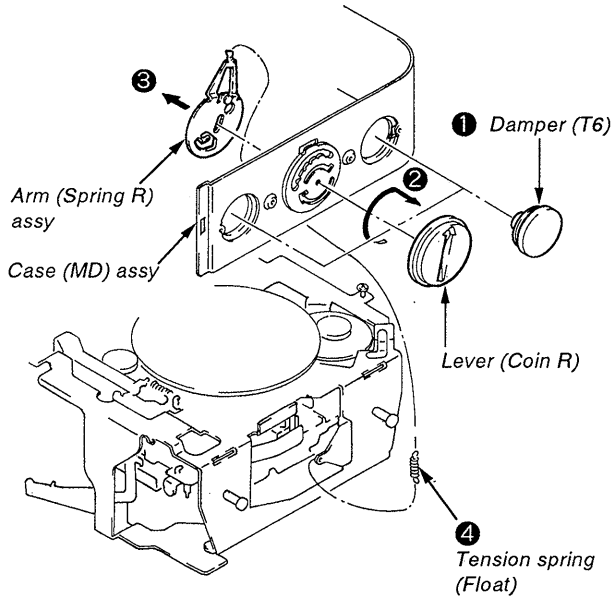
2-3. JACK BOARD



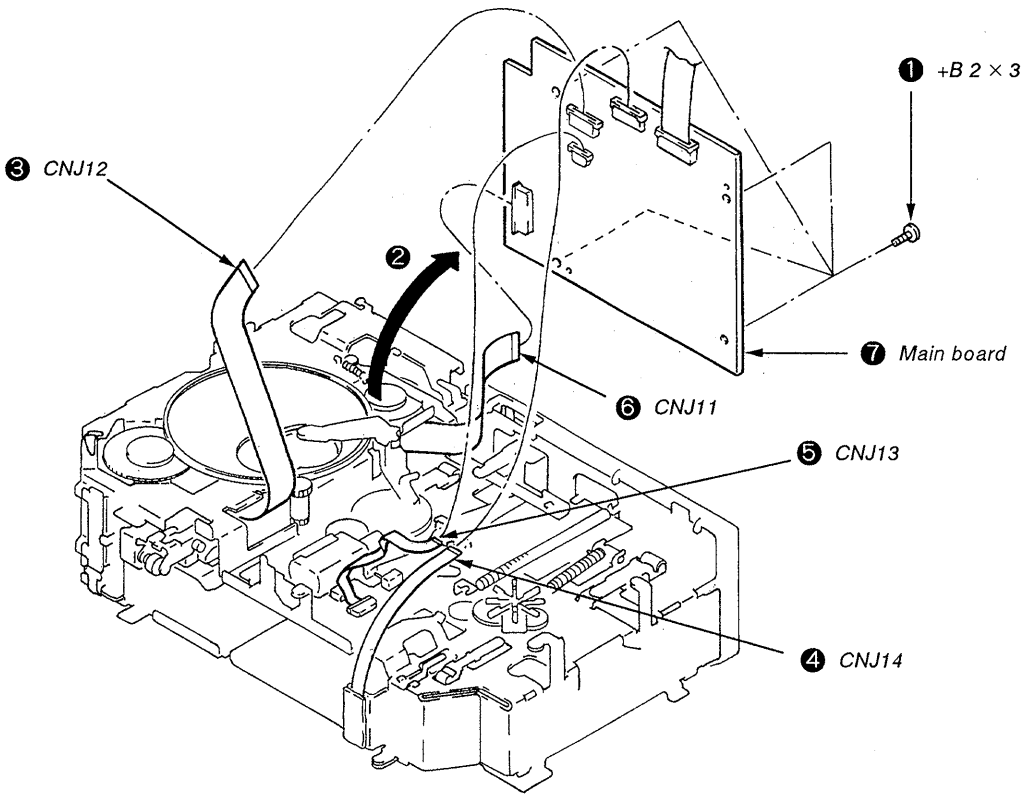
2-4. DAMPER (T6), LEVER (COIN L), ARM (SPRING L) ASSY



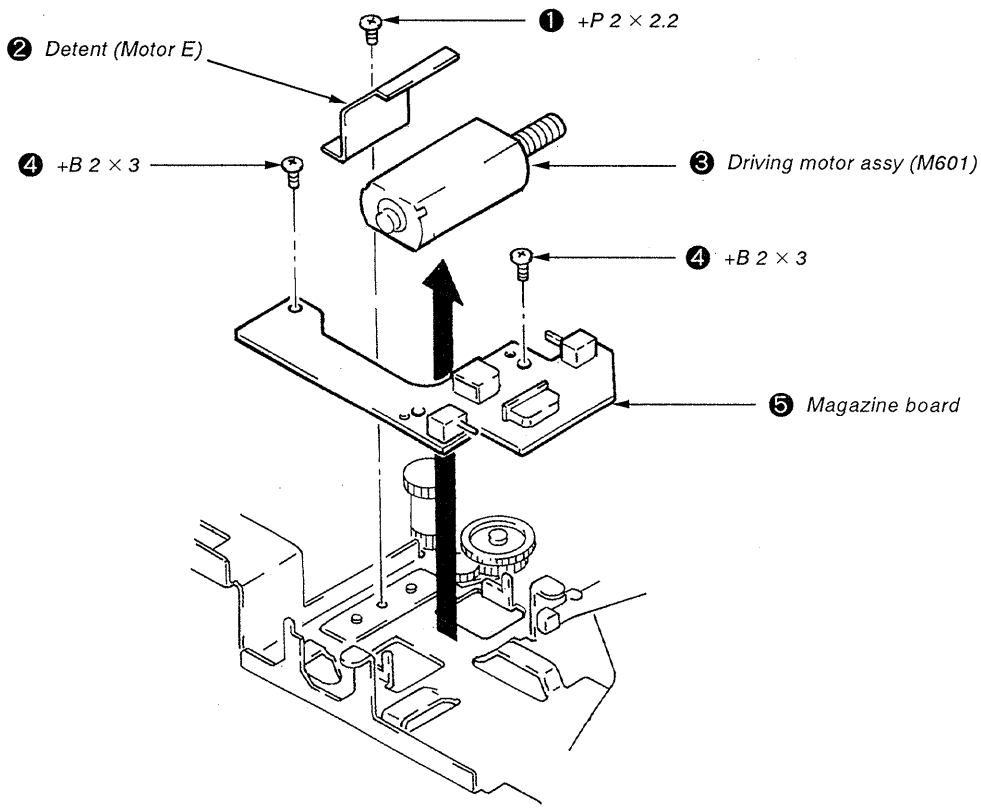
2-5. DAMPER (T6), LEVER (COIN R), ARM (SPRING R) ASSY



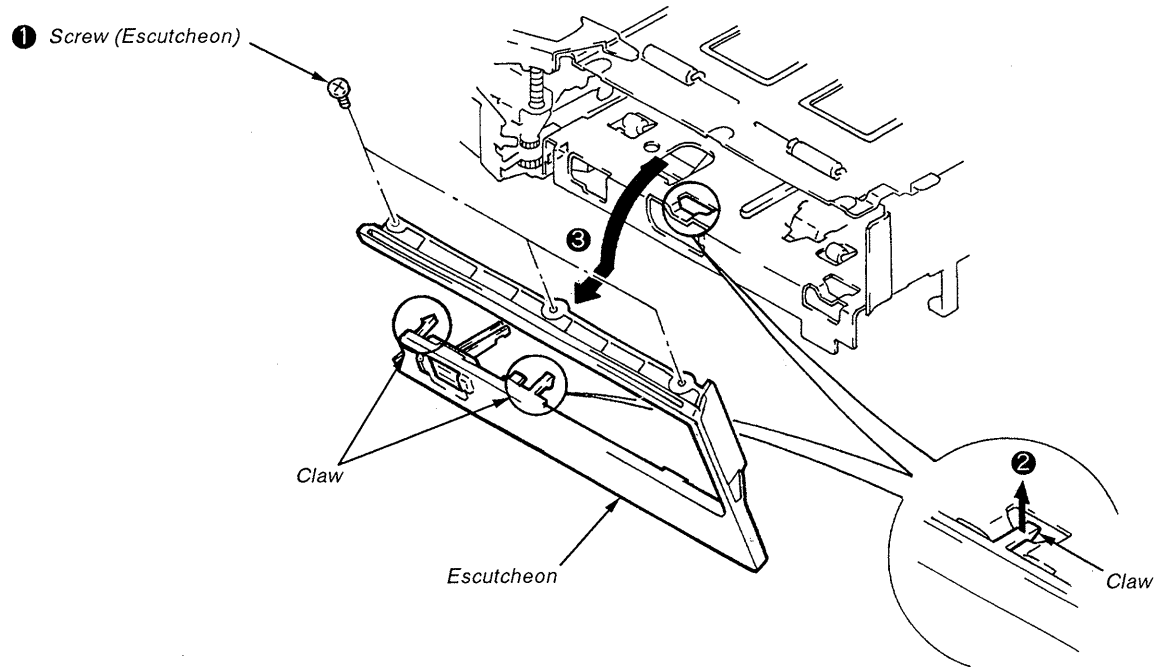
2-6. MAIN BOARD



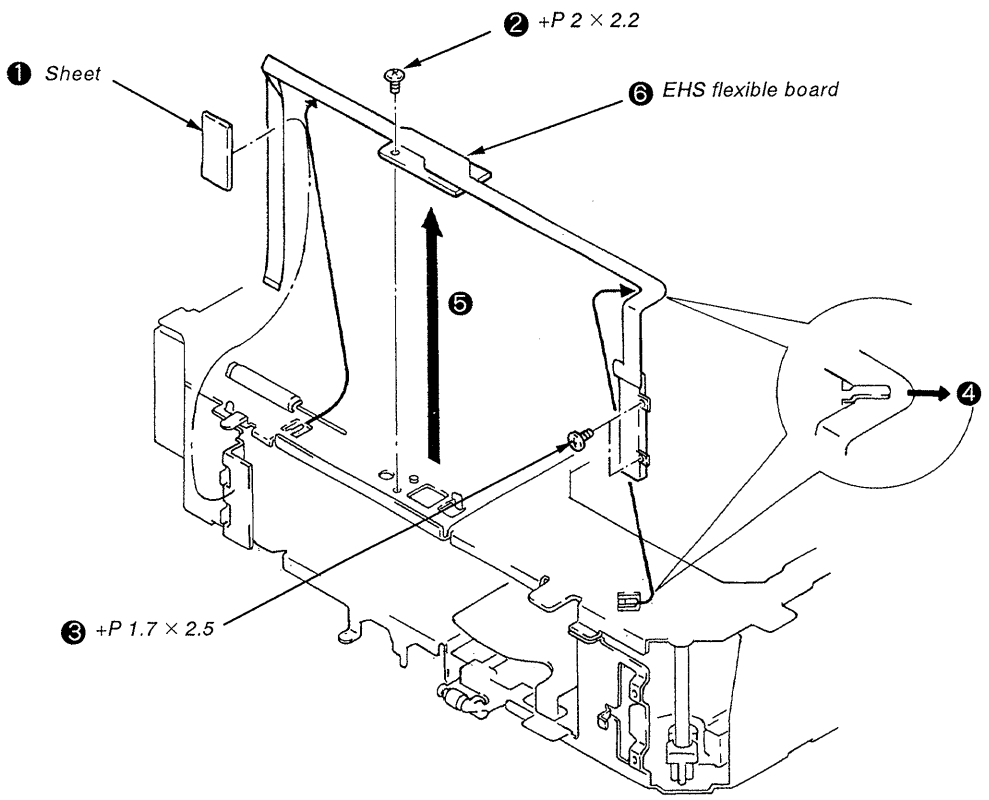
2-7. DRIVING MOTOR ASSY (M601), MAGAZINE BOARD



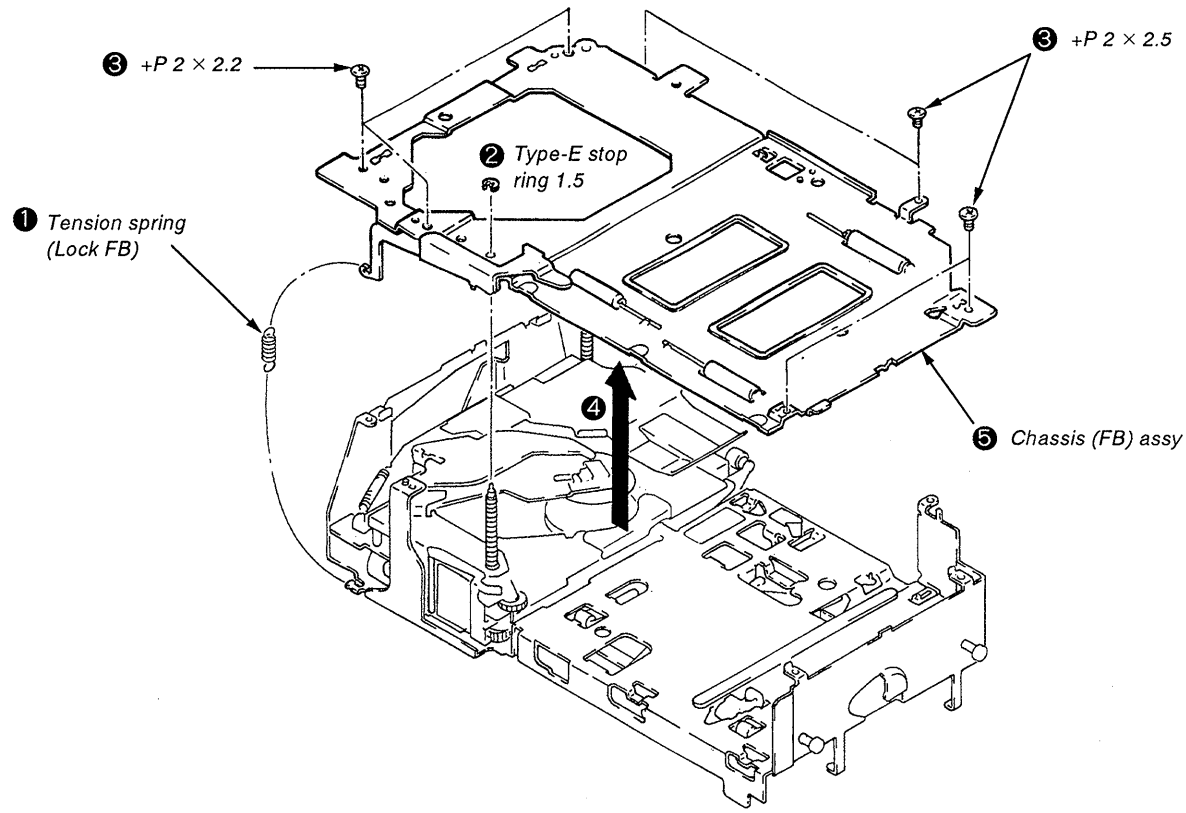
2-8. ESCUTCHEON



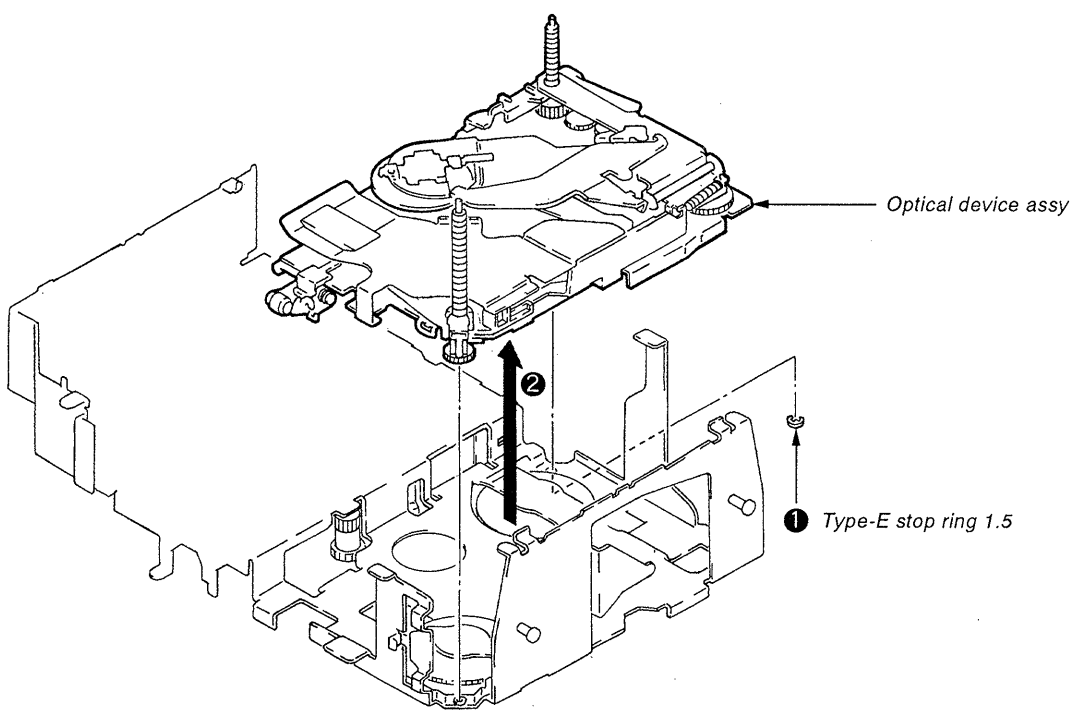
2-9. EHS FLEXIBLE BOARD



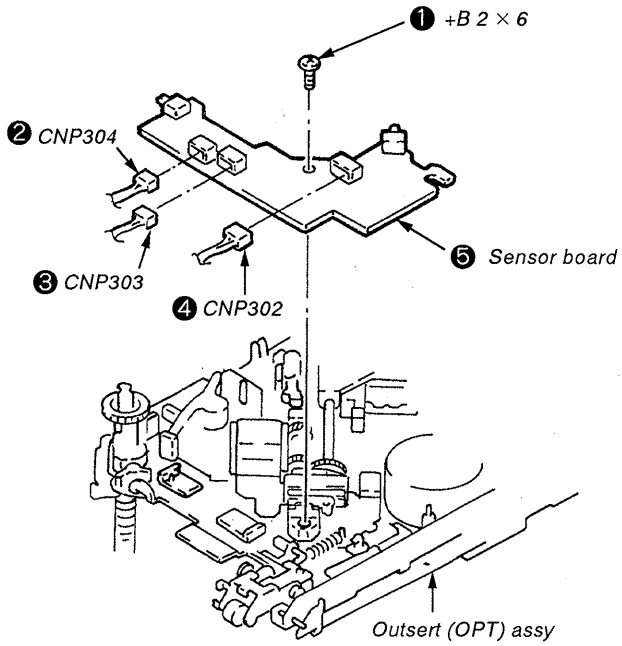
2-10. CHASSIS (FB) ASSY



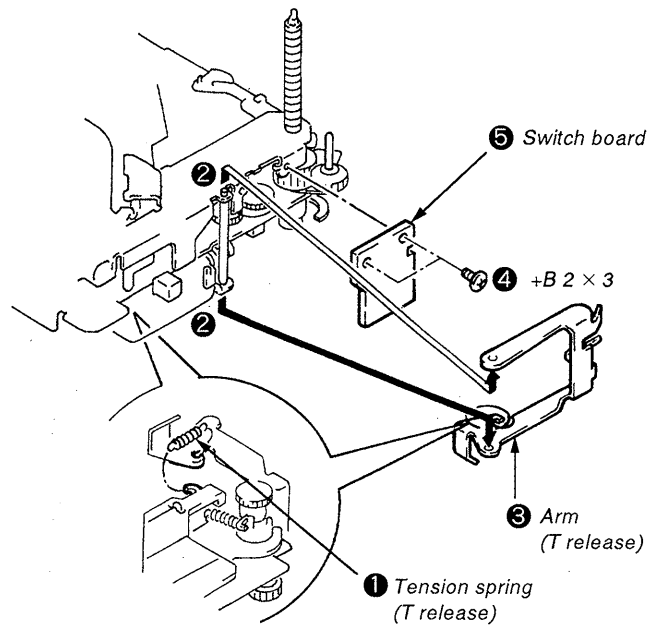
2-11. OPTICAL DEVICE ASSY



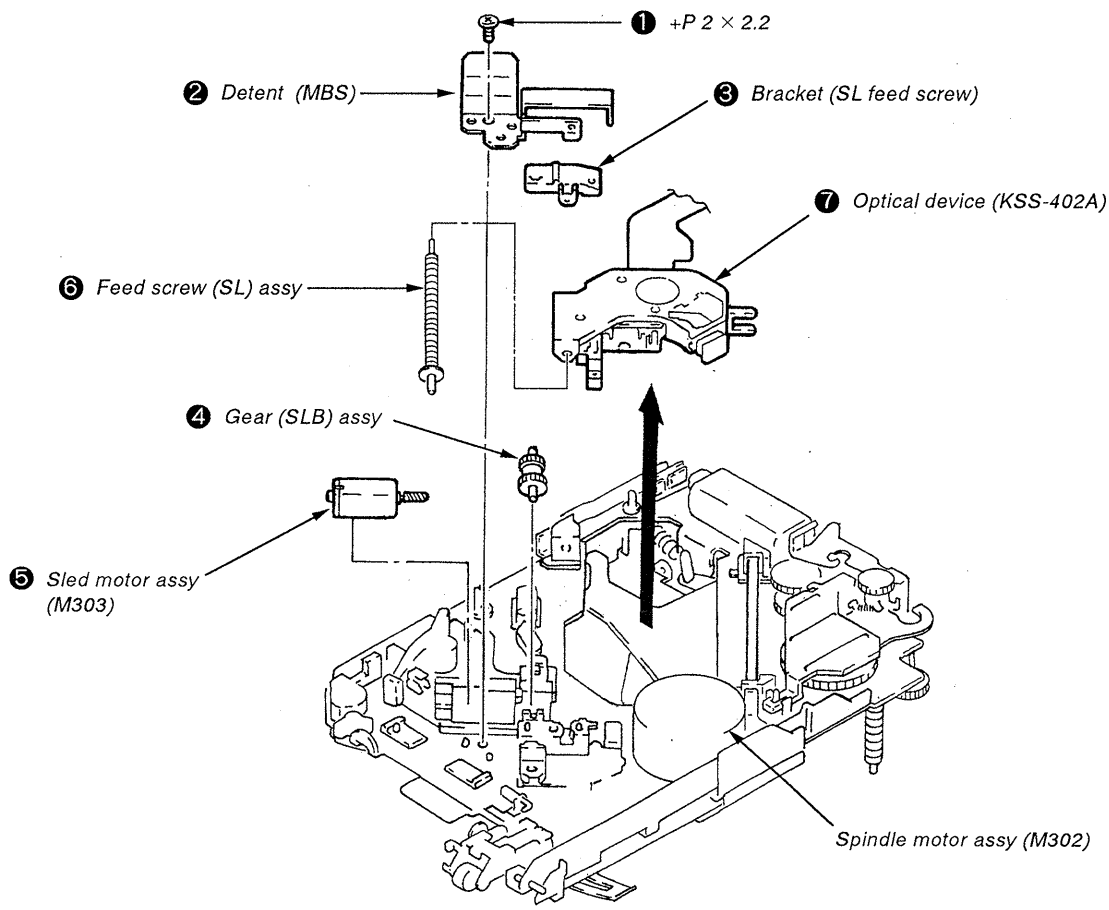
2-12. SENSOR BOARD



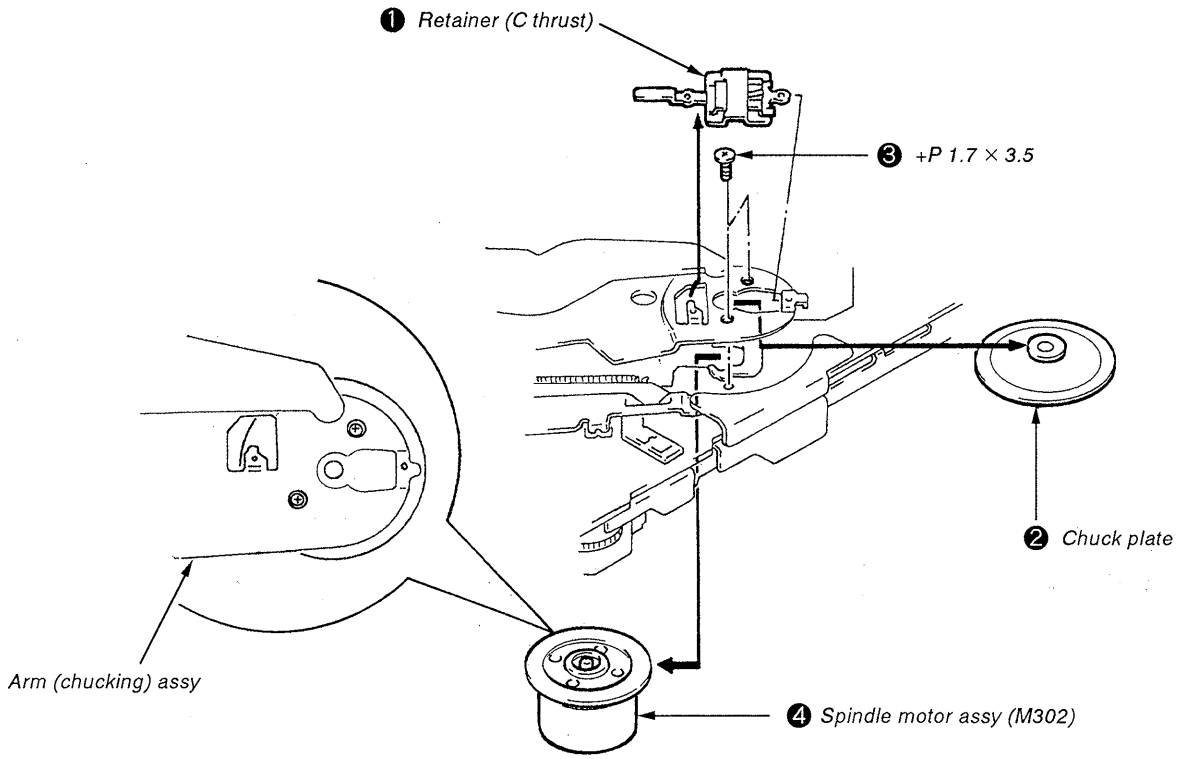
2-14. SWITCH BOARD



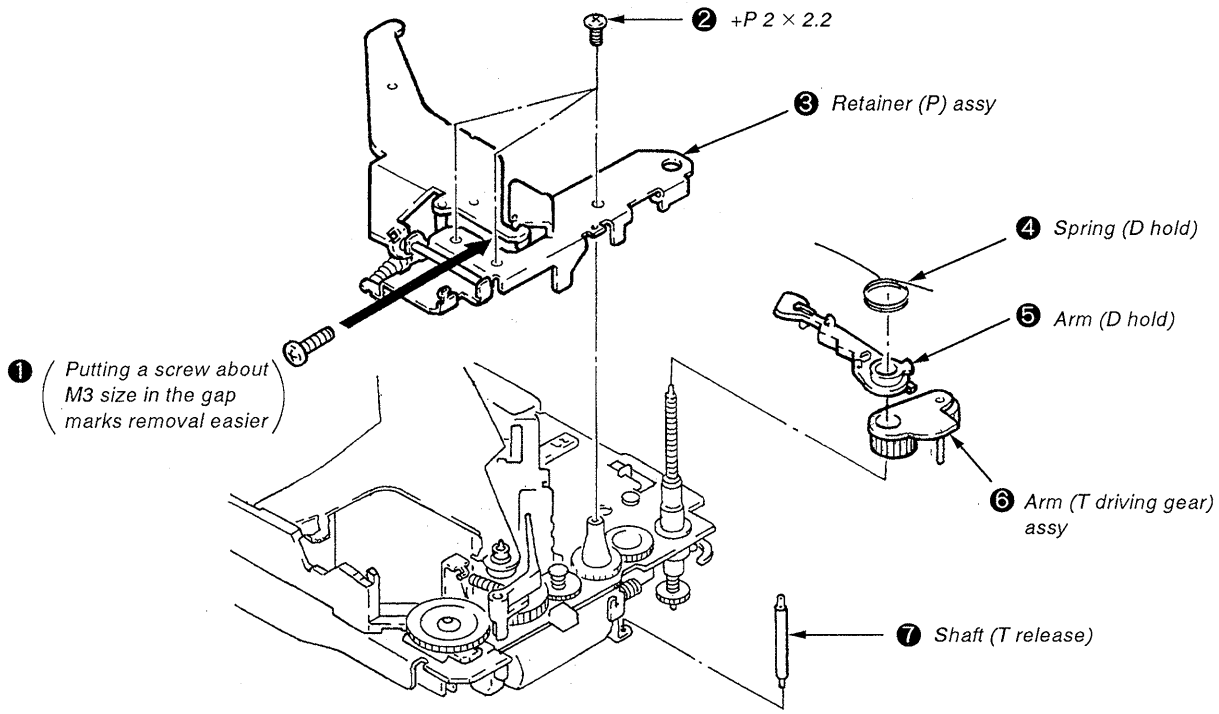
2-13. SLED MOTOR ASSY (M303), OPTICAL DEVICE (KSS-402A)



2-15. SPINDLE MOTOR ASSY (M302)



2-16. RETAINER (P) ASSY, ARM (T DRIVING GEAR) ASSY

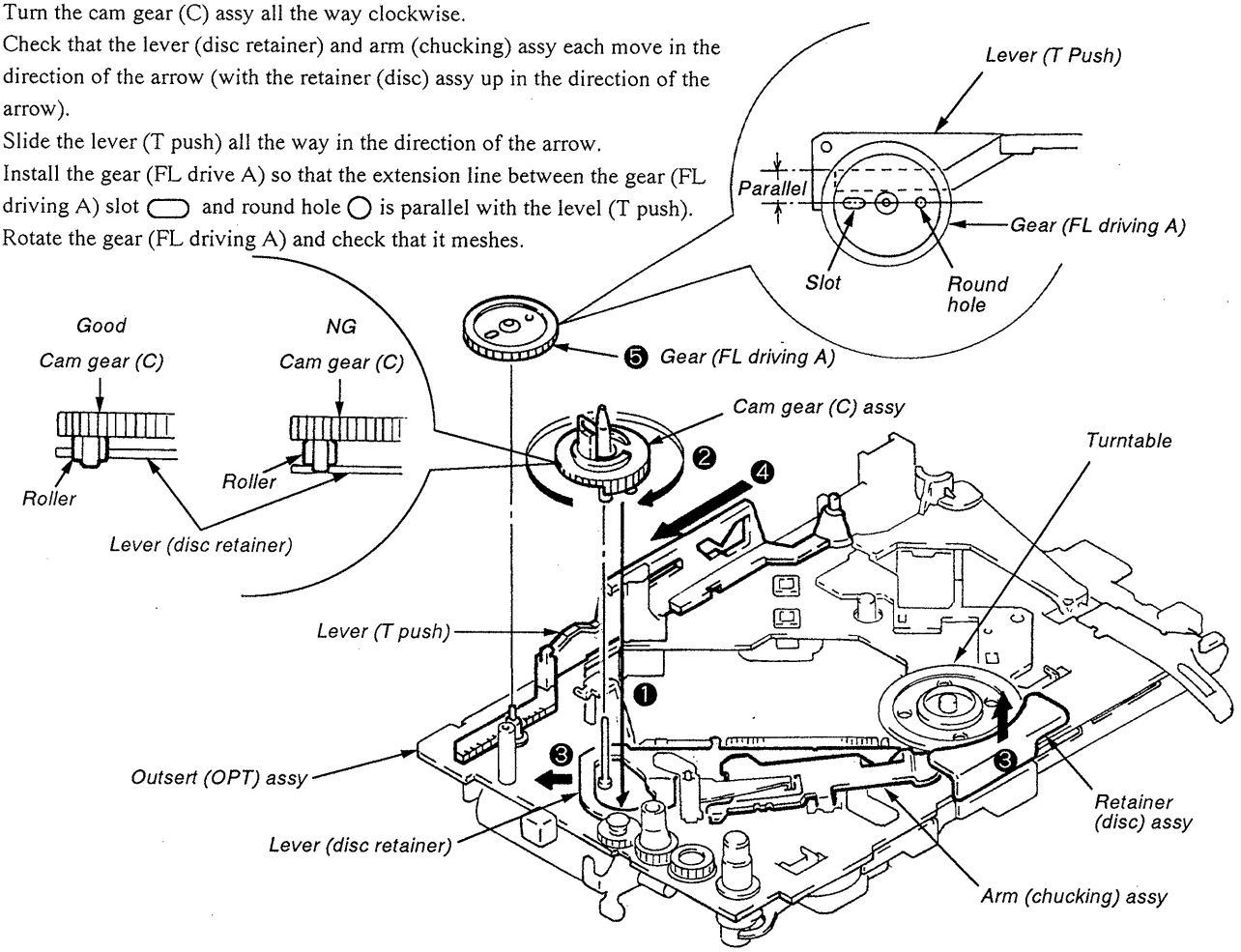

❷ +P 2 × 2.2
❸ Retainer (P) assy
❹ Spring (D hold)
❺ Arm (D hold)
❶ Putting a screw about M3 size in the gap marks removal easier
❻ Arm (T driving gear) assy
❼ Shaft (T release)

SECTION 3
INSTALLATION

Note : Install in the order of the numbers in the figure.

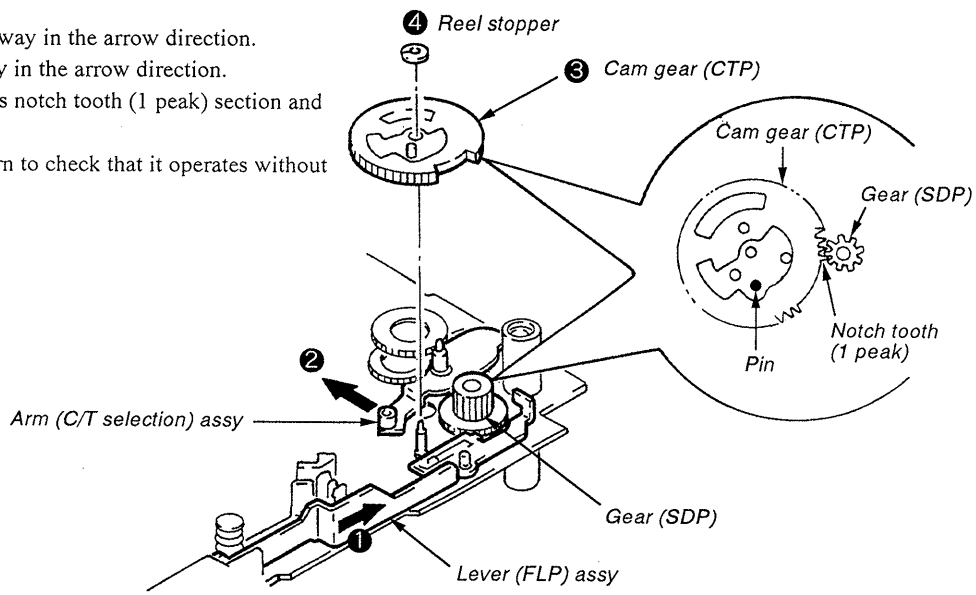
3-1. CAM GEAR (C) ASSY, GEAR (FL DRIVING A)

❶ Install the cam gear (C) assy.
(The cam gear (C) roller must securely enter the irregularly shaped hole in the lever (disc retainer).)
❷ Turn the cam gear (C) assy all the way clockwise.
❸ Check that the lever (disc retainer) and arm (chucking) assy each move in the direction of the arrow (with the retainer (disc) assy up in the direction of the arrow).
❹ Slide the lever (T push) all the way in the direction of the arrow.
❺ Install the gear (FL drive A) so that the extension line between the gear (FL driving A) slot ⊂⊃ and round hole ○ is parallel with the level (T push). Rotate the gear (FL driving A) and check that it meshes.



3-2. CAM GEAR (CTP)

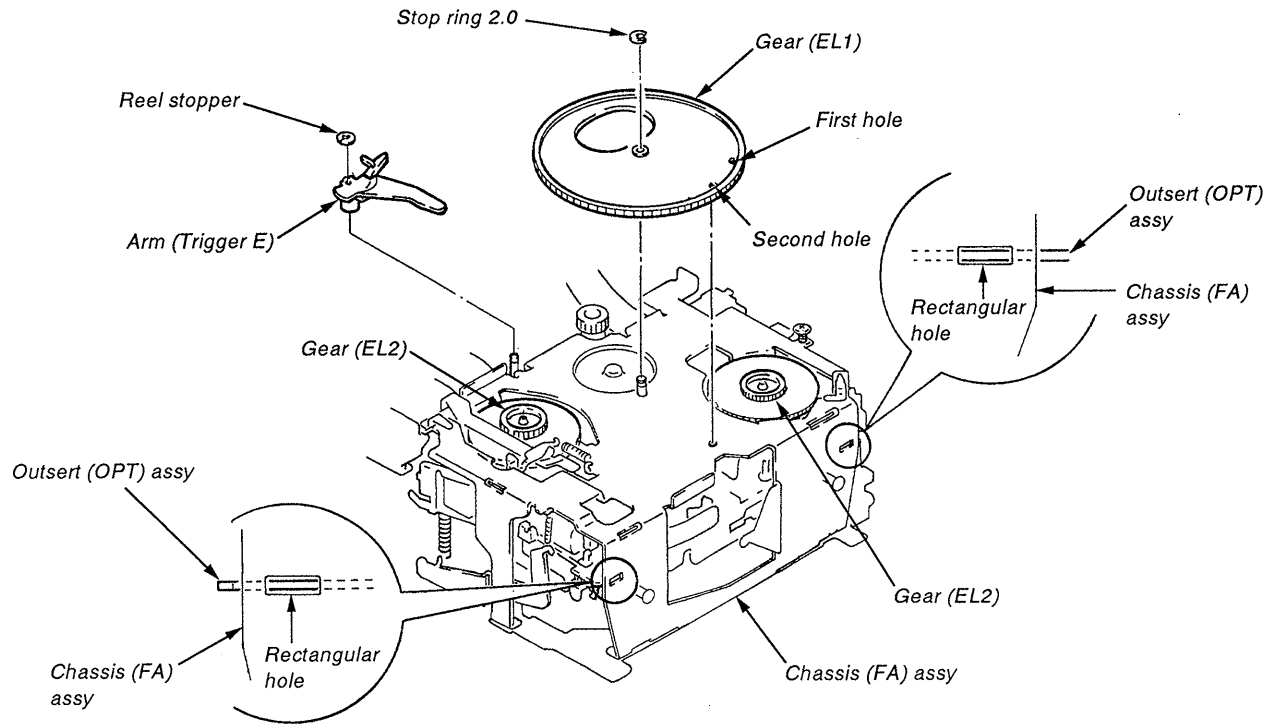
❶ Slide the lever (FLP) assy all the way in the arrow direction.
❷ Move the arm (C/T selection) assy in the arrow direction.
❸ Install the cam gear (CTP) with its notch tooth (1 peak) section and the gear (SDP) meshing.
Rotate the cam gear (CTP) 1/4 turn to check that it operates without catching or other obstruction.
❹ Install the reel stopper.



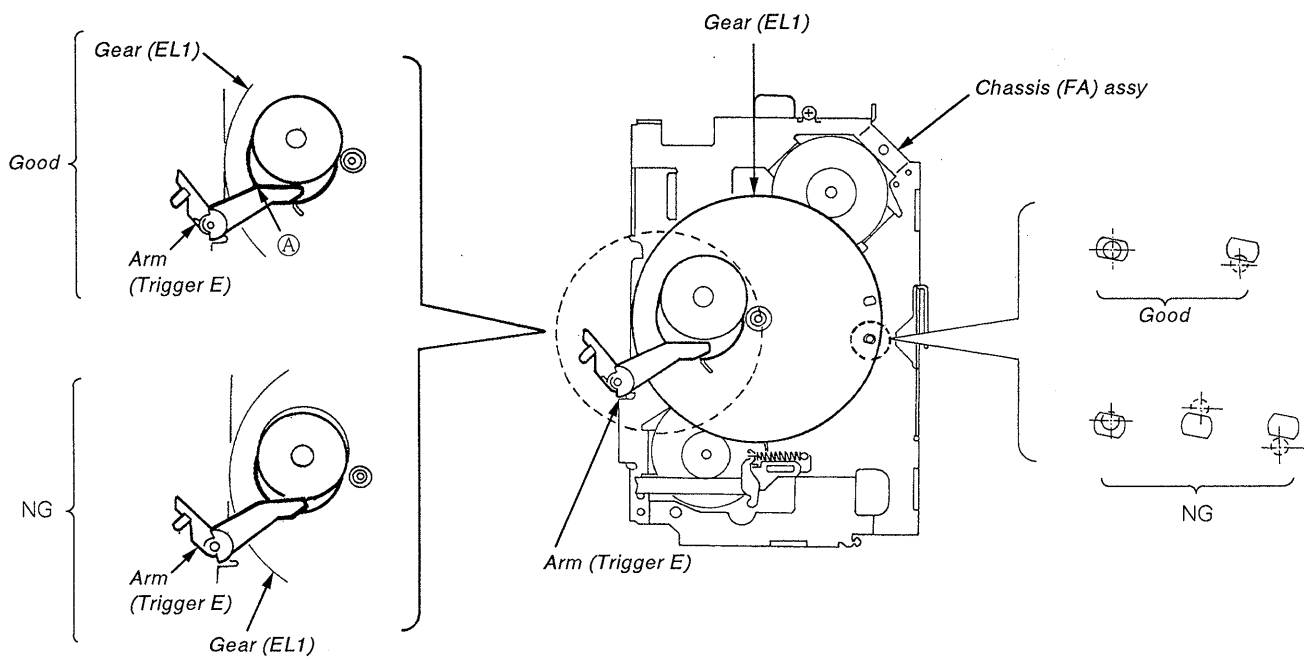
SECTION 4
MECHANICAL ADJUSTMENTS

4-1. ELEVATOR HEIGHT ADJUSTMENT (Elevator Address 1 Adjustment)

1. Remove the arm (trigger E) and gear (EL1).
2. Turning the two gears (EL2) changes the elevator height. Turn the two gear (EL2) together and align the center of the rectangular hole of the chassis (FA) assy with the outsert (OPT) assy. (Elevator Address 1 adjustment)
   * The left side gear (EL2) is harder to turn than the right side gear (EL2) , so use some strength tuning it.
3. Without moving the two gear (EL2), install the gear (EL1) so that the second hole on the gear (EL1) is aligned with the hole in the chassis (FA) assy.



4. Install the arm (trigger E) so that the arm (trigger E) Ⓐ section is directly above the hole in the gear (EL1).

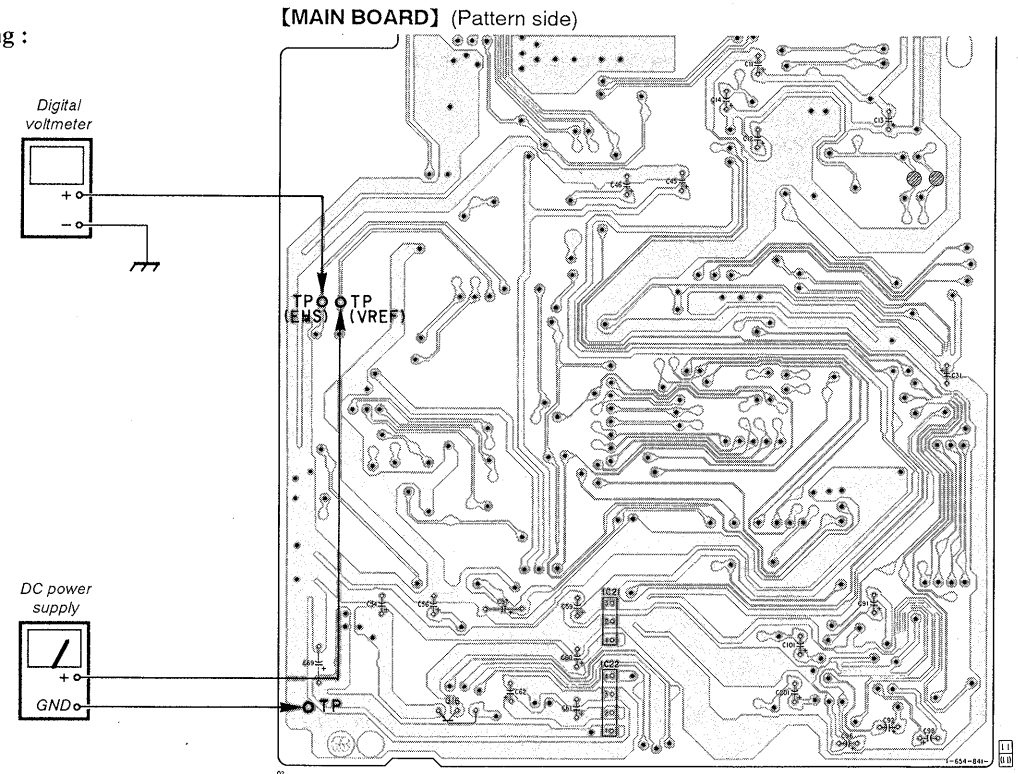


4-2. LINEAR POSITION SENSOR ADJUSTMENT

Note :

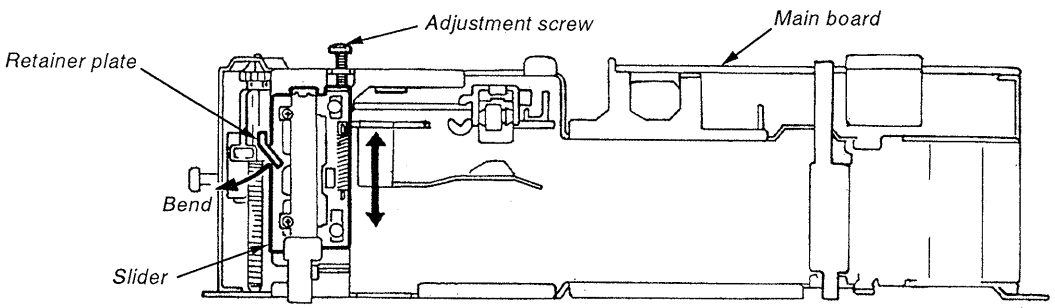
1. When the elevator height is adjusted as part of any repairs, the linear position sensor (RV601) must be adjusted.
   This adjustment is for absorbing the variation in the performance of the RV601 parts and is not a mechanical deck adjustment.
   Therefore, this adjustment is only carried out when the mechanical deck elevator height adjustment (Address 1 adjustment) is made.
2. Never supply power to the set main unit during this adjustment. (Have the bus cable disconnected.)

Setting :



Adjustment method :

1. Extend the plate holding down the RV601 slider with radial pliers to free the slider.
2. Connect the TP (VREF) on the main board to a dc power supply.
3. Connect a digital voltmeter to the main board TP (EHS).



(Mechanism deck rear view)

4. Supply 5.00 ± 0.01V power from the dc power supply to the TP (VREF).
5. Turn the adjustment screw so that the digital voltmeter reads 4.03 ± 0.02V.
6. After the adjustment, disconnect the stabilized power supply and the digital voltmeter.
7. Apply the power supply to the set main unit, insert the magazine, operate, and check that there is no address deviation.
8. Bend the retainer plate back the way it was originally.
9. Apply suitable locking compound to the adjustment screw.

   * After adjusting the linear position sensor (RV601), put in the magazine and operate. If address deviation is found, recheck the elevator height adjustment (Elevator Address 1 adjustment). The following causes are possible.

   Examples :

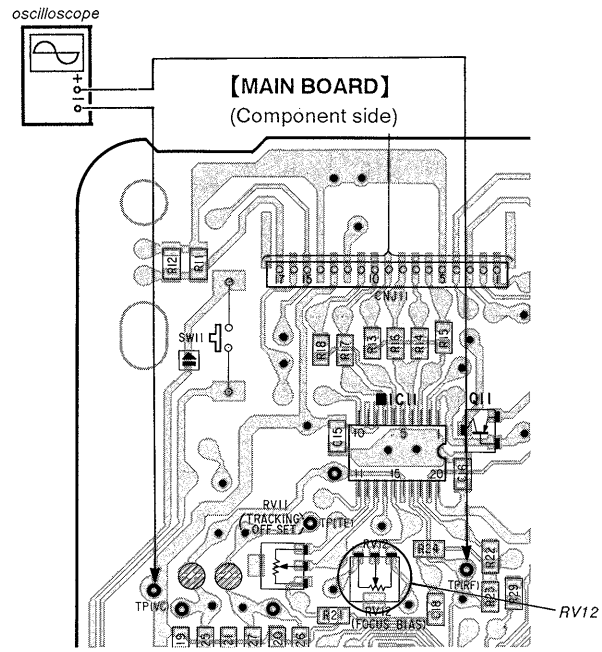
   - The mechanical deck gear (TDFP) and magazine gear teeth are not meshing.
   - During ejection, the gear (EL1) was not in the prescribed position.
   - After magazine ejection was carried out five times, the magazine lock was unlocked.

SECTION 5
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code : 3-702-101-01, but only when indicated.
3. Power supply voltage : DC 14.4V (more than 3A).

1. Focus Bias Adjustment

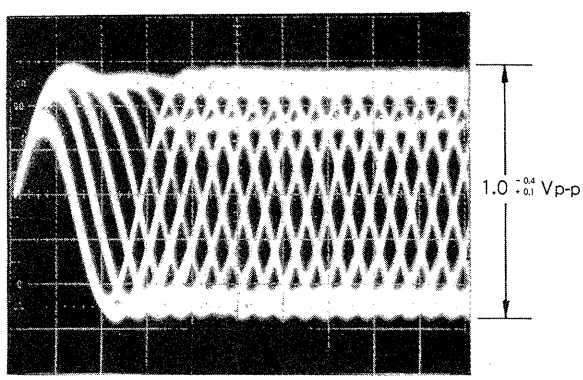
Procedure :



1. Connect the oscilloscope to MAIN board test point [RF], pin ⑰ of IC11.
2. Put the set into play mode by loading the disc.
3. Adjust (MAIN board) RV12 so that the waveform on the oscilloscope (eye pattern) is good.

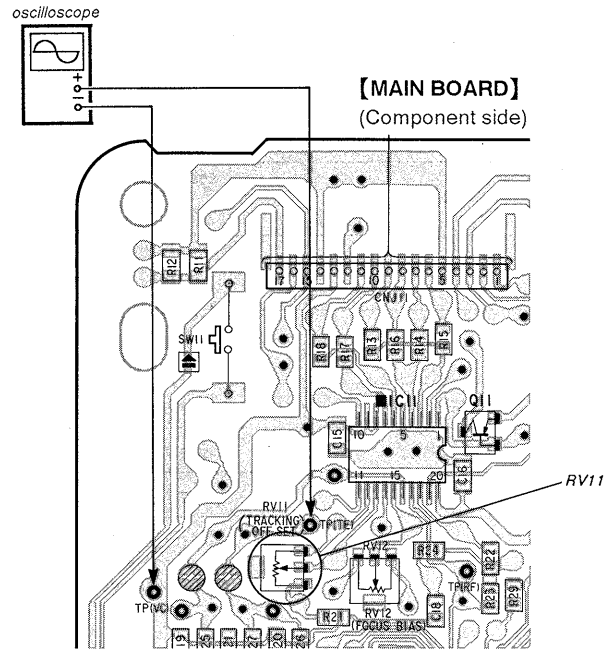
(A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)

Volt/Div : 200mV
Time/Div : 0.5 μsec



2. Tracking Offset Adjustment

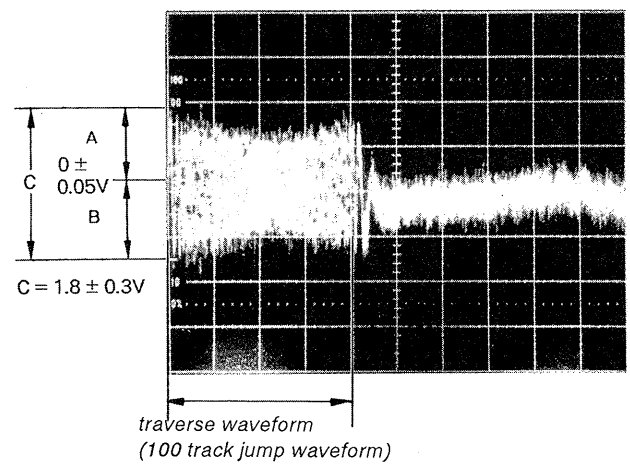
Procedure :



1. Connect the oscilloscope to MAIN board test point [TE], pin ⑭ of IC11.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ button, then, check the traverse waveform.*
4. Adjust RV11 (MAIN board) so that the oscilloscope reading is symmetrical in relation to 0V.

*Traverse waveform : This is the tracking error waveform appears when crossing the track.

Volt/Div : 0.5V
Time/Div : 2msec
Center 0 ± 0.05V



SECTION 6
EXPLANATION OF IC TERMINALS

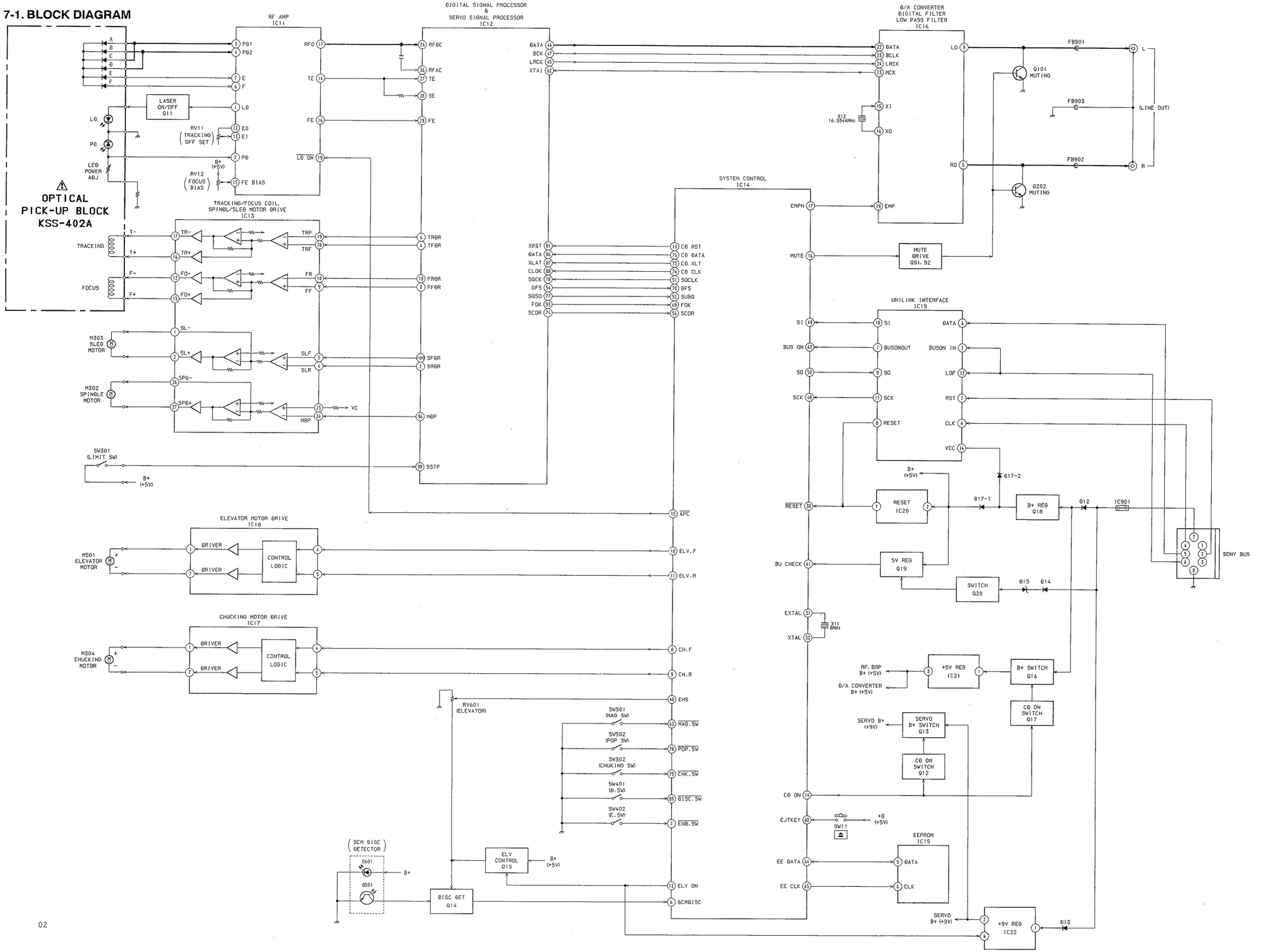
IC14 CXP84124-024Q

<table>
<tr><th>Pin No.</th><th>Pin name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1
|
5</td><td>———</td><td>–</td><td>Not used for this unit.</td></tr>
<tr><td>6</td><td>8CM DISC</td><td>I</td><td>Input terminal of 8CM DISC sensor. “H” : Chucking the 8CM disc.</td></tr>
<tr><td>7</td><td>$\overline{\text{END. SW}}$</td><td>I</td><td>END switch input terminal . “L” : The time from the beginning of disc loading to the completion of chucking.</td></tr>
<tr><td>8</td><td>CH. F</td><td>O</td><td rowspan="2">Chucking motor control terminal.
<table><tr><th></th><th>FWD</th><th>REV</th><th>Brake</th></tr><tr><td>CH. F</td><td>H</td><td>L</td><td>H</td></tr><tr><td>CH. R</td><td>L</td><td>H</td><td>H</td></tr></table>Forward rotation: Load chucking
Reverse ration: Save</td></tr>
<tr><td>9</td><td>CH. R</td><td>O</td></tr>
<tr><td>10</td><td>ELV. F</td><td>O</td><td rowspan="2">Elevator motor control terminal.
<table><tr><th></th><th>FWD</th><th>REV</th><th>Brake</th></tr><tr><td>ELV. F</td><td>H</td><td>L</td><td>H</td></tr><tr><td>ELV. R</td><td>L</td><td>H</td><td>H</td></tr></table>Forward rotation: Address up (①→⑥)
Reverse ration: Address down (⑥→①)</td></tr>
<tr><td>11</td><td>ELV. R</td><td>O</td></tr>
<tr><td>12</td><td>ELV. ON</td><td>O</td><td>Mechanism ON/OFF control terminal. “H” : ON</td></tr>
<tr><td>13</td><td>CD RST</td><td>O</td><td>Reset terminal of servo system. “L” : ON</td></tr>
<tr><td>14</td><td>CD ON</td><td>O</td><td>Servo system power ON/OFF. “H” : ON</td></tr>
<tr><td>15</td><td>$\overline{\text{APC}}$</td><td>O</td><td>Laser ON/OFF control terminal. “L” : ON</td></tr>
<tr><td>16</td><td>A-MUTE</td><td>O</td><td>Mute of audio output. “H” : MUTE</td></tr>
<tr><td>17</td><td>EMPH</td><td>O</td><td>Emphasis control output terminal. “H” : Emphasis ON</td></tr>
<tr><td>18</td><td>A. OUT</td><td>I</td><td rowspan="3">Function (YES, NO) setting terminal.
<table><tr><th></th><th>YES</th><th>NO</th></tr><tr><td>ANALOG OUT</td><td>L</td><td>H</td></tr><tr><td>DIGITAL OUT</td><td>H</td><td>L</td></tr><tr><td>EEPROM (E²PROM)</td><td>L</td><td>H</td></tr></table></td></tr>
<tr><td>19</td><td>D. OUT</td><td>I</td></tr>
<tr><td>20</td><td>EEPROM</td><td>I</td></tr>
<tr><td>21
|
29</td><td>———</td><td>–</td><td>Not used for this unit.</td></tr>
<tr><td>30</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>System reset terminal of “L” level active.</td></tr>
<tr><td>31</td><td>EXTAL</td><td>I</td><td>System clock input terminal. (8MHz)</td></tr>
<tr><td>32</td><td>XTAL</td><td>O</td><td>System clock output terminal.</td></tr>
<tr><td>33</td><td>Vss</td><td>–</td><td>GND terminal.</td></tr>
<tr><td>34</td><td>TX</td><td>O</td><td rowspan="2">Timer counter clock in/out terminal. (32kHz)
Not used for this unit.</td></tr>
<tr><td>35</td><td>TEX</td><td>I</td></tr>
<tr><td>36</td><td>AVss</td><td>–</td><td>GND terminal of A/D converter.</td></tr>
<tr><td>37</td><td>AVREF</td><td>I</td><td>Standard voltage input terminal of A/D converter.</td></tr>
<tr><td>38</td><td>TEMP. H</td><td>A/D I</td><td>Temperature detection terminal for servo temperature compensation.</td></tr>
<tr><td>39</td><td>TEMP. L</td><td>–</td><td>Not used for this unit.</td></tr>
<tr><td>40</td><td>EHS</td><td>A/D I</td><td>This terminal detects the height of elevator.</td></tr>
</table>

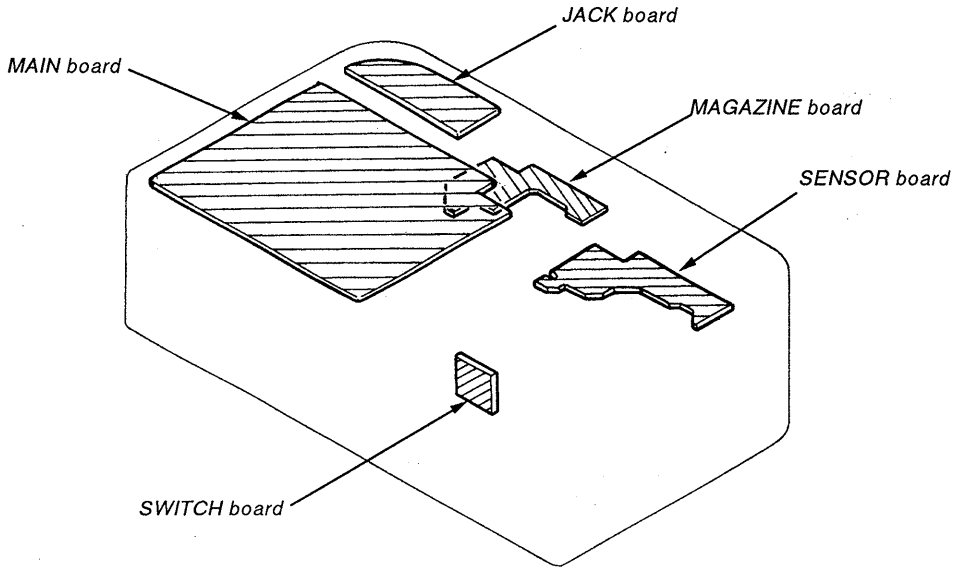
Pin No.	Pin name	I/O	Description
41 | 47	———	–	Not used for this unit.
48	SCK	I	Input terminal of serial clock.
49	SI	I	Input terminal of serial data.
50	SO	O	Output termina of serial data
51	SQCLK	O	Output terminal of clock SQ for DSP.
52	SUBQ	I	Input terminal of SUBQ.
53	REQ	–	Not used for this unit.
54	———	–	Not used for this unit.
55	D. O. ON/OFF	I	ON/OFF control terminal for digital output. "L" : OFF
56	SCOR	I	SCOR input terminal of DSP.
57 | 59	———	–	Not used for this unit.
60	EJT KEY	I	Input terminal of EJECT KEY. "H" : EJECT ON
61	BUCHECK	I	BACK-UP detection. "H" : BACK-UP ON
62	BUS ON	I	Input terminal BUS ON. "H" : BUS ON
63	$\overline{\text{MAG. SW}}$	I	Input terminal of MAGAZINE switch. "L" : MAGAZINE IN
64	EE DATA	I/O	Input/output terminal of E^2PROM DATA.
65	EE CLK	O	Clock output terminal for E^2PROM.
66	EE INIT	I	E^2PROM initialize input terminal. "L" : RESET → E^2PROM initialize
67	$\overline{\text{PGM}}$	I	Program play ON/OFF setting terminal. "L" : ON
68	$\overline{\text{SINGLE}}$	I	Signal play mode setting terminal. "H" : OFF
69	FOK	I	FOK input terminal of DSP.
70	GFS	I	GFS input terminal of DSP.
71	SENSE	I	SENSE input terminal of DSP.
72	V_{DD}	–	Positive power supply terminal.
73	NC	–	NC terminal. Connected to V_{DD} at time of normally operation.
74	CDCLK	O	Servo control serial data transmission clock output terminal.
75	CDXLT	O	Servo control latch output terminal.
76	CDDATA	O	Servo control serial data output terminal.
77	SCLK	O	SENS serial read out clock output terminal.
78	$\overline{\text{POS. SW}}$	I	Input terminal of POSITION switch. "L" : Elevator eject
79	$\overline{\text{CHK. SW}}$	I	Input terminal of CHUCKING switch. "L" : Chucking ON
80	$\overline{\text{DISC. SW}}$	I	Input terminal of DISC switch. "L" : Disc ON

SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM



• CIRCUIT BOARDS LOCATION



• SEMICONDUCTOR LEAD LAYOUTS

BA6297AFP

ST-308

EC10DS2

KIA7805PI

XN1A312-TX

RB411D
RD6.2MA-B1
RD6.2M-B2
1SS184

PQ09RA1

2SB1123-R
2SD1622-S

1SS319 (TE85R)

RH5VA40AA

2SB1446

DTC323TK
UN2111
UN2112
UN2212
2SB624-BV345
2SC2712-YG

DSA3A4

• SEMICONDUCTOR LOCATION

Ref. No.	Location
D12	H – 16
D13	I – 16
D14	H – 15
D15	H – 15
D16	J – 16
D17	I – 15
D18	J – 14
D19	H – 14
D20	G – 14
D21	G – 14
D22	G – 14
D23	G – 14
D601	G – 24
IC11	C – 11
IC12	E – 12
IC13	C – 14
IC14	G – 12
IC15	H – 13
IC16	I – 10
IC17	F – 15
IC18	F – 15
IC19	G – 15
IC20	I – 14
IC21	I – 4
IC22	J – 4
IC901	H – 21
Q11	C – 12
Q12	D – 15
Q13	D – 14
Q14	F – 14
Q15	G – 14
Q16	J – 3
Q17	J – 15
Q18	J – 16
Q19	H – 16
Q20	H – 15
Q91	I – 11
Q92	I – 11
Q101	I – 12
Q201	J – 12
Q501	G – 25

Note:

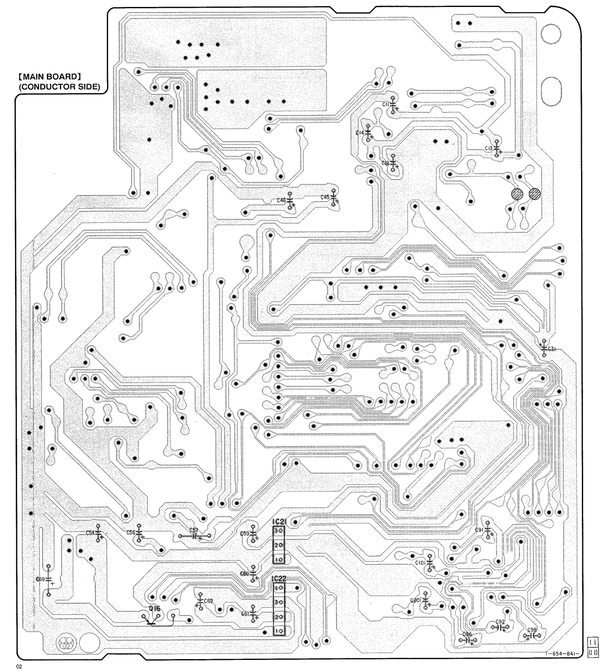
- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)

Caution :

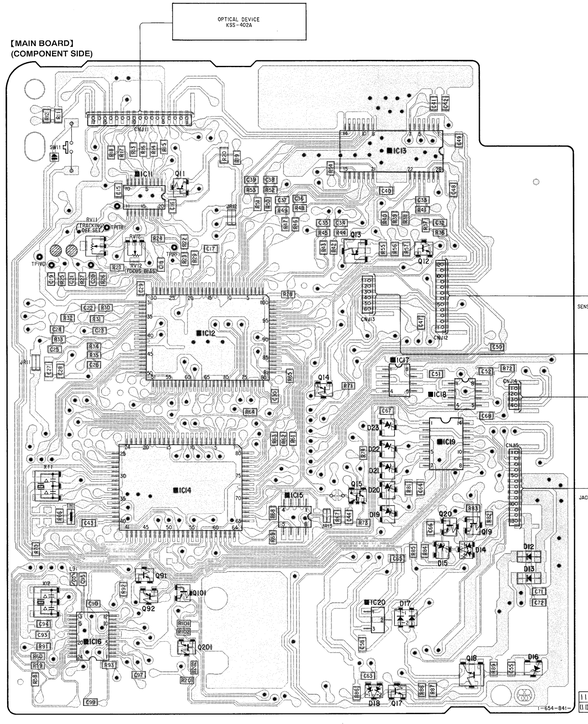
Pattern face side : (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side : (Component side) Parts on the parts face side seen from the parts face are indicated.

7-2. PRINTED WIRING BOARDS

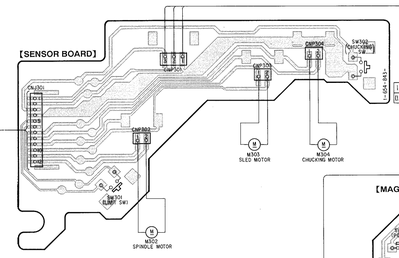
【MAIN BOARD】
(CONDUCTOR SIDE)



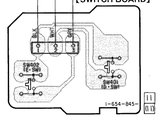
【MAIN BOARD】
(COMPONENT SIDE)



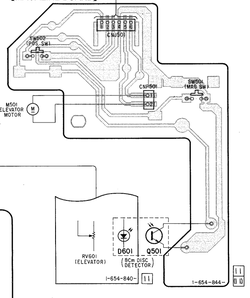
【SENSOR BOARD】



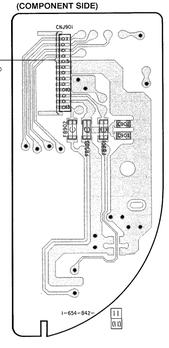
【SWITCH BOARD】



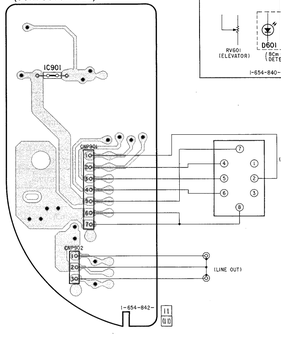
【MAGAZINE BOARD】



【JACK BOARD】
(COMPONENT SIDE)

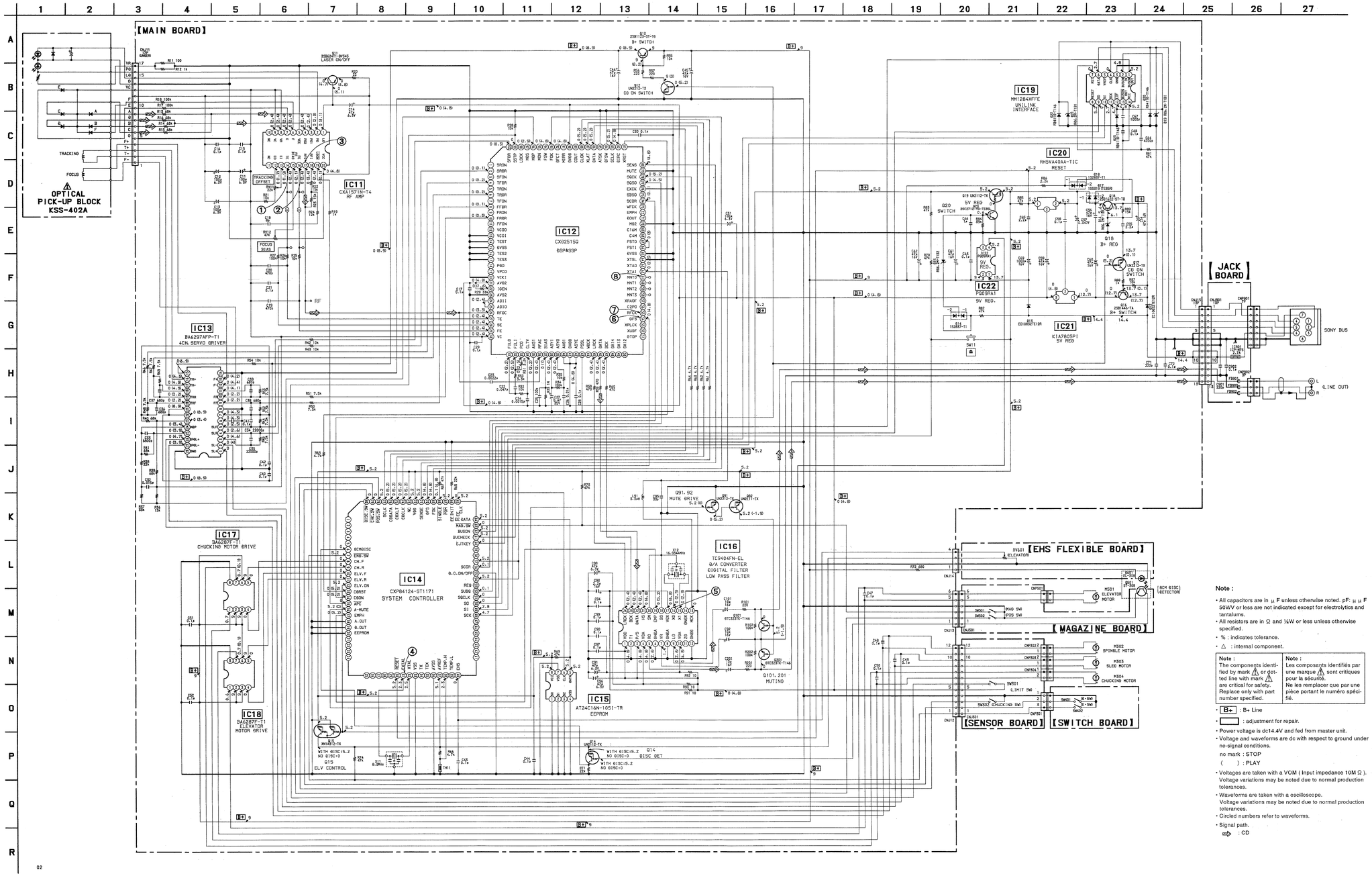


【JACK BOARD】
(CONDUCTOR SIDE)



7-3. SCHEMATIC DIAGRAM

● Refer to page 29 for IC Block Diagrams.



● WAVEFORMS

① APPROX. 250mVp-p — 2V — IC11 ⑭ PLAY

② APPROX. 600mVp-p — 2V — IC11 ⑮ PLAY

③ 0.9Vp-p — IC11 ⑰ PLAY

④ 4.2Vp-p, 124 µsec — IC14 ㉛

⑤ 4.5Vp-p, 59 µsec — IC16 ⑱

⑥ 4.8Vp-p, 134 µsec — IC12 ㉟

⑦ 5.0Vp-p, 138 µsec — IC12 ㊳

⑧ 4.2Vp-p, 0.059 µsec — IC12 ㊴

Note :

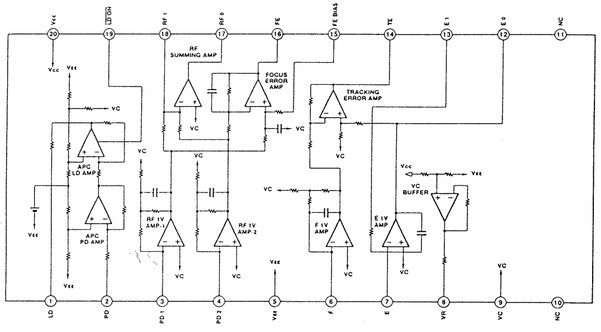
- All capacitors are in µ F unless otherwise noted. pF: µ µ F 50WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note :	Note :
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

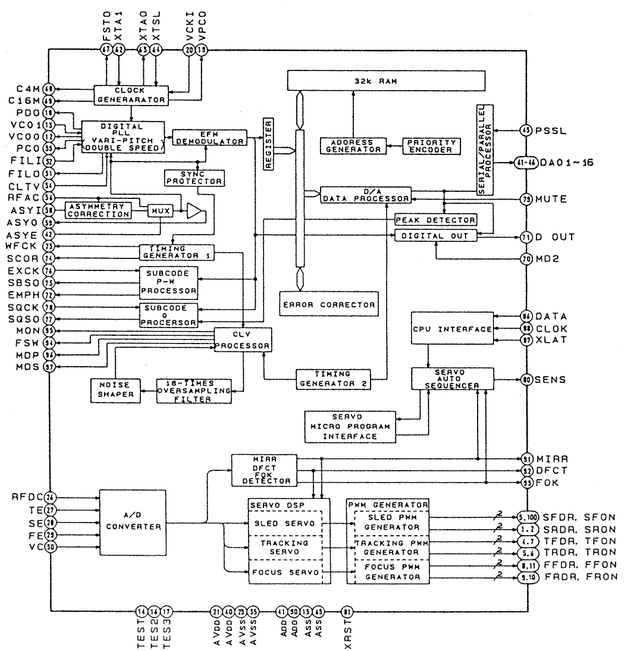
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc14.4V and fed from master unit.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : PLAY
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

7-4. IC BLOCK DIAGRAMS

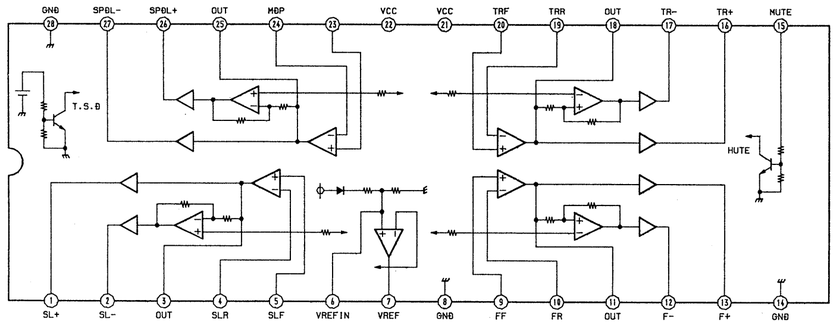
IC11 CXA1571N



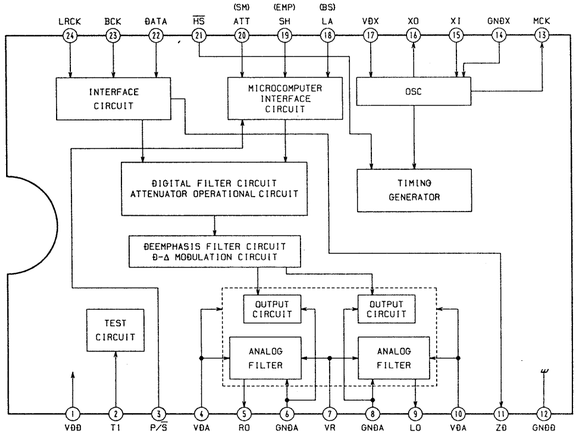
IC12 CXD2515Q



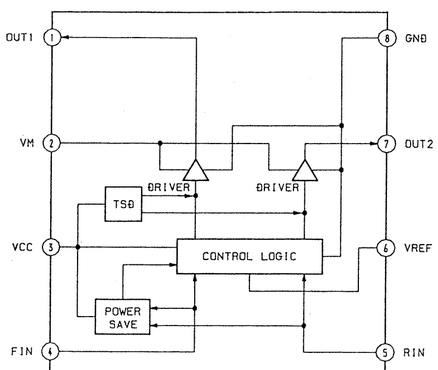
IC13 BA6297AFP



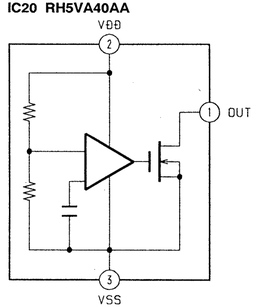
IC16 TC9404FN-EL



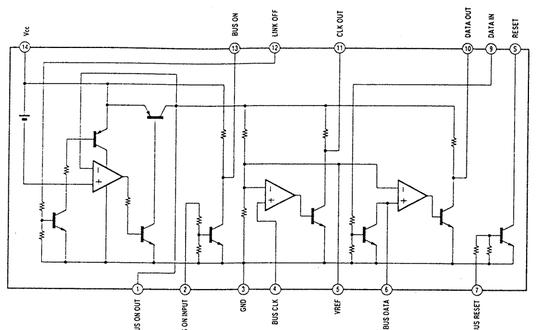
IC17, 18 BA6287F



IC20 RH5VA40AA



IC19 MM1284XFFE



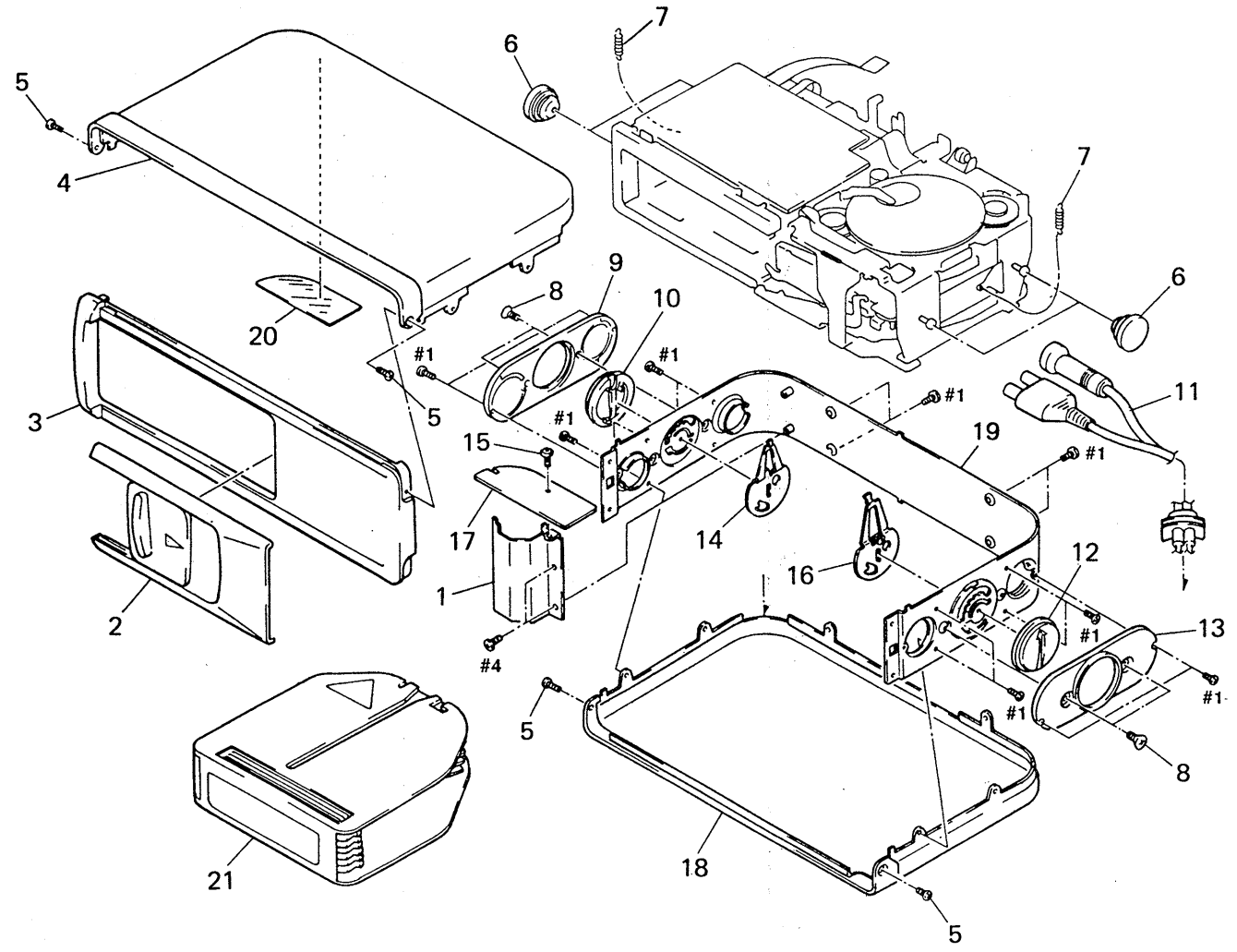
SECTION 8
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

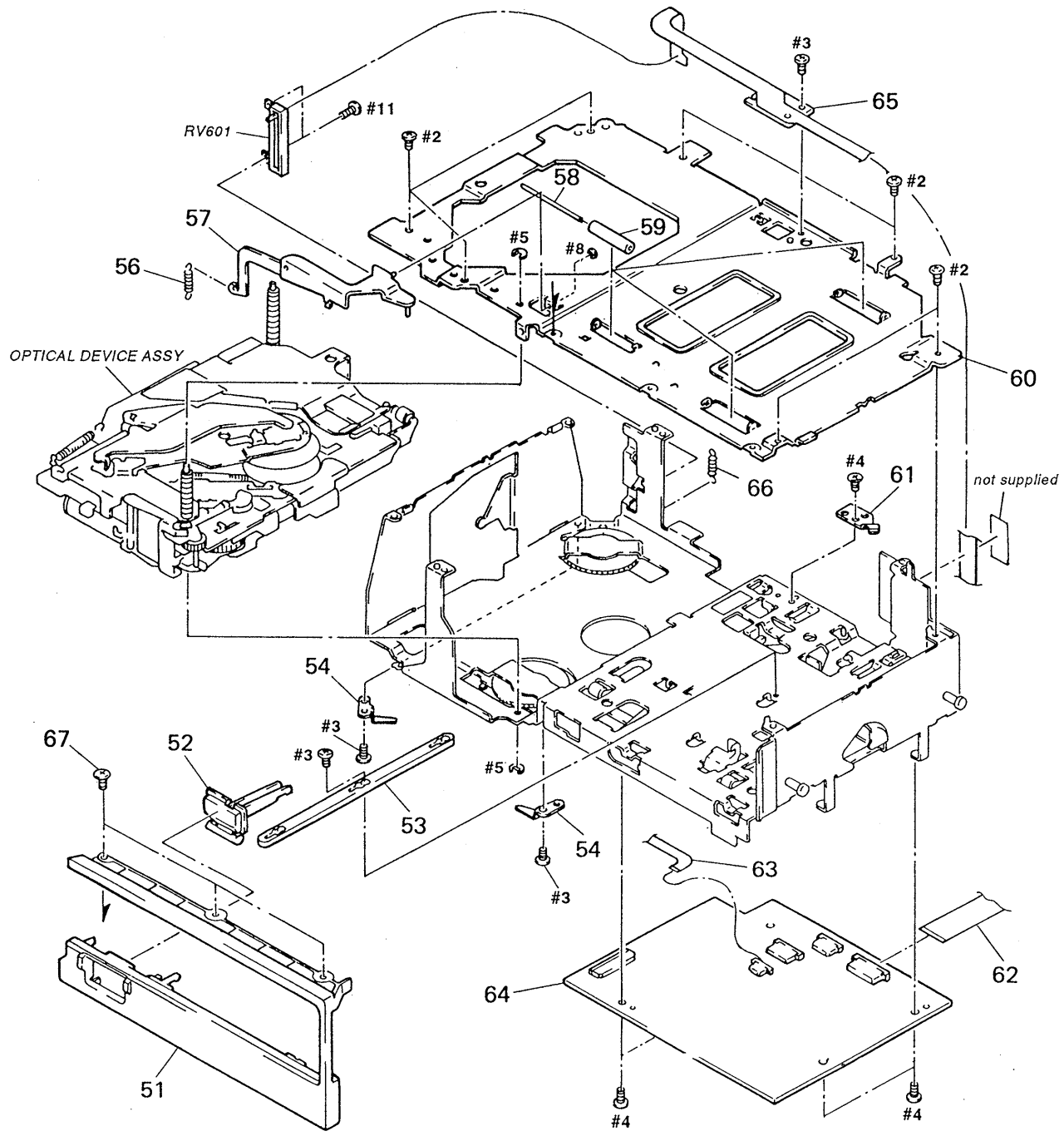
8-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-920-312-01	BRACKET (CHASSIS 2)	
2	X-3369-486-1	DOOR ASSY	
3	X-3369-947-2	PANEL ASSY, FRONT (EXCEPT US)	
3	X-3370-389-1	PANEL ASSY, FRONT (US)	
* 4	X-3369-481-1	CASE (UP) ASSY	
5	3-920-360-01	SCREW (FRONT PANEL)	
6	3-920-391-11	DAMPER (T6)	
7	3-914-055-01	SPRING (FLOAT), TENSION	
8	3-920-359-01	SCREW (COVER)	
9	3-919-535-01	COVER (DAMPER)	
10	3-919-534-01	LEVER (COIN L)	
11	1-769-248-11	CORD (WITH CONNECTOR) (SONY BUS/LINE OUTPUT)	

Ref. No.	Part No.	Description	Remark
12	3-919-546-01	LEVER (COIN R)	
13	3-919-535-11	COVER (DAMPER)	
* 14	X-3369-483-1	ARM (SPRING L) ASSY	
15	3-913-406-01	SCREW (GROUND)	
* 16	X-3369-484-1	ARM (SPRING R) ASSY	
* 17	1-654-842-11	JACK BOARD	
* 18	X-3369-482-1	CASE (DOWN) ASSY	
* 19	X-3369-670-1	CASE (MD) ASSY	
* 20	3-920-361-01	SHEET (PC BOARD)	
21	A-3291-257-A	MAGAZINE ASSY (A)	

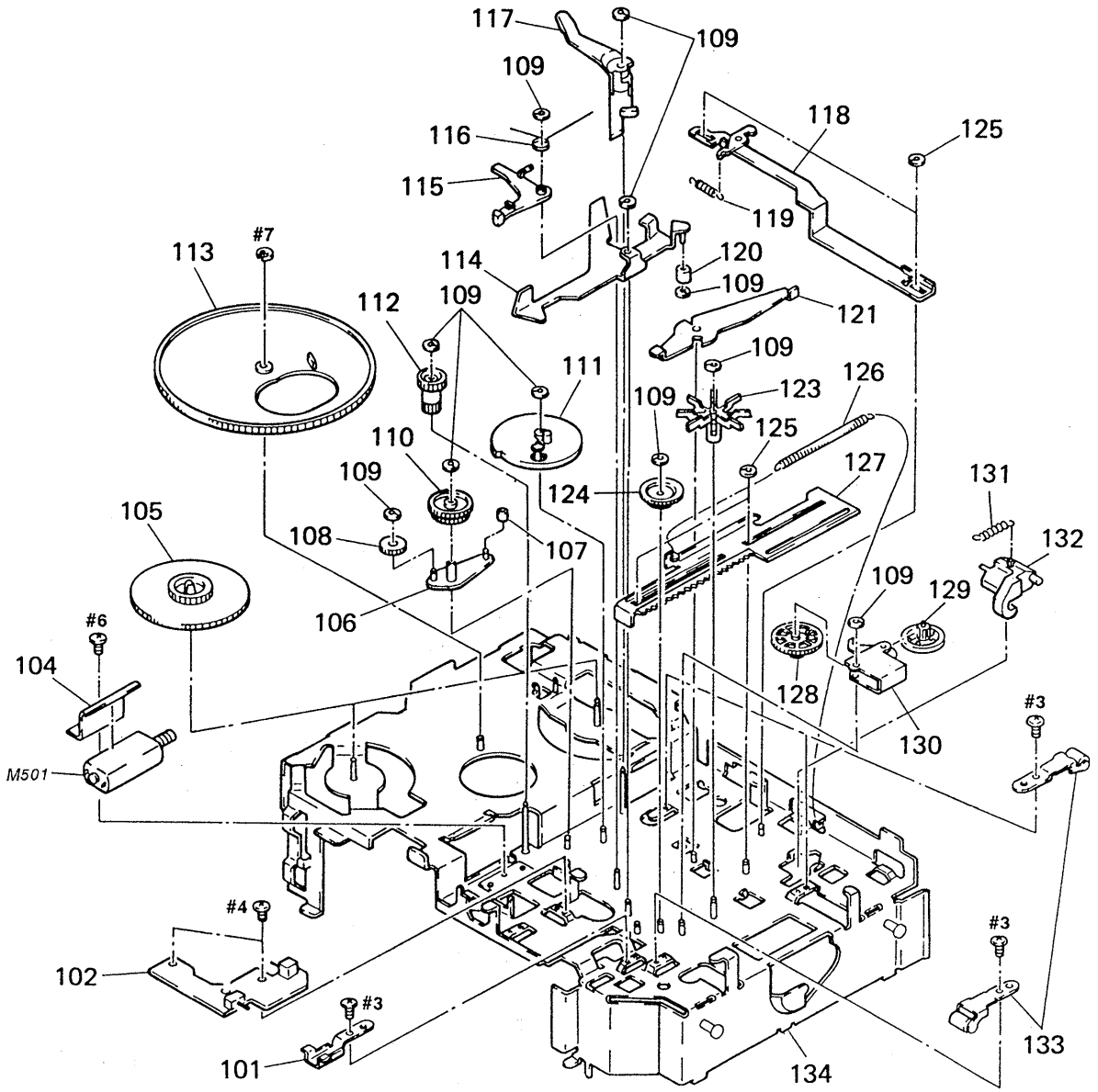
8-2. MD SECTION-1



Ref. No.	Part No.	Description	Remark
51	3-919-687-01	ESCUTCHEON	
52	3-919-688-01	BUTTON (EJ)	
53	3-913-970-01	GUIDE (MAGAZINE)	
54	3-914-031-01	DETENT (EL)	
56	3-914-083-01	SPRING (LOCK FB), TENSION	
57	X-3368-458-1	ARM (LOCK FB) ASSY	
58	3-914-030-01	SHAFT (MB)	
59	3-914-029-01	ROLLER (MB)	
* 60	X-3368-439-1	CHASSIS (FB) ASSY	

Ref. No.	Part No.	Description	Remark
61	3-914-072-01	RETAINER (MAGAZINE)	
62	1-655-251-11	JACK FLEXIBLE BOARD	
63	1-655-250-11	MAGAZINE FLEXIBLE BOARD	
* 64	A-3298-398-A	MAIN BOARD, COMPLETE	
65	1-654-840-11	EHS FLEXIBLE BOARD	
66	3-921-391-01	SPRING (LINEAR), TENSION	
67	3-920-362-01	SCREW (ESCUTCHEON)	
RV601	1-223-817-11	RES, VAR, SLIDE 10K (ELEVATOR)	

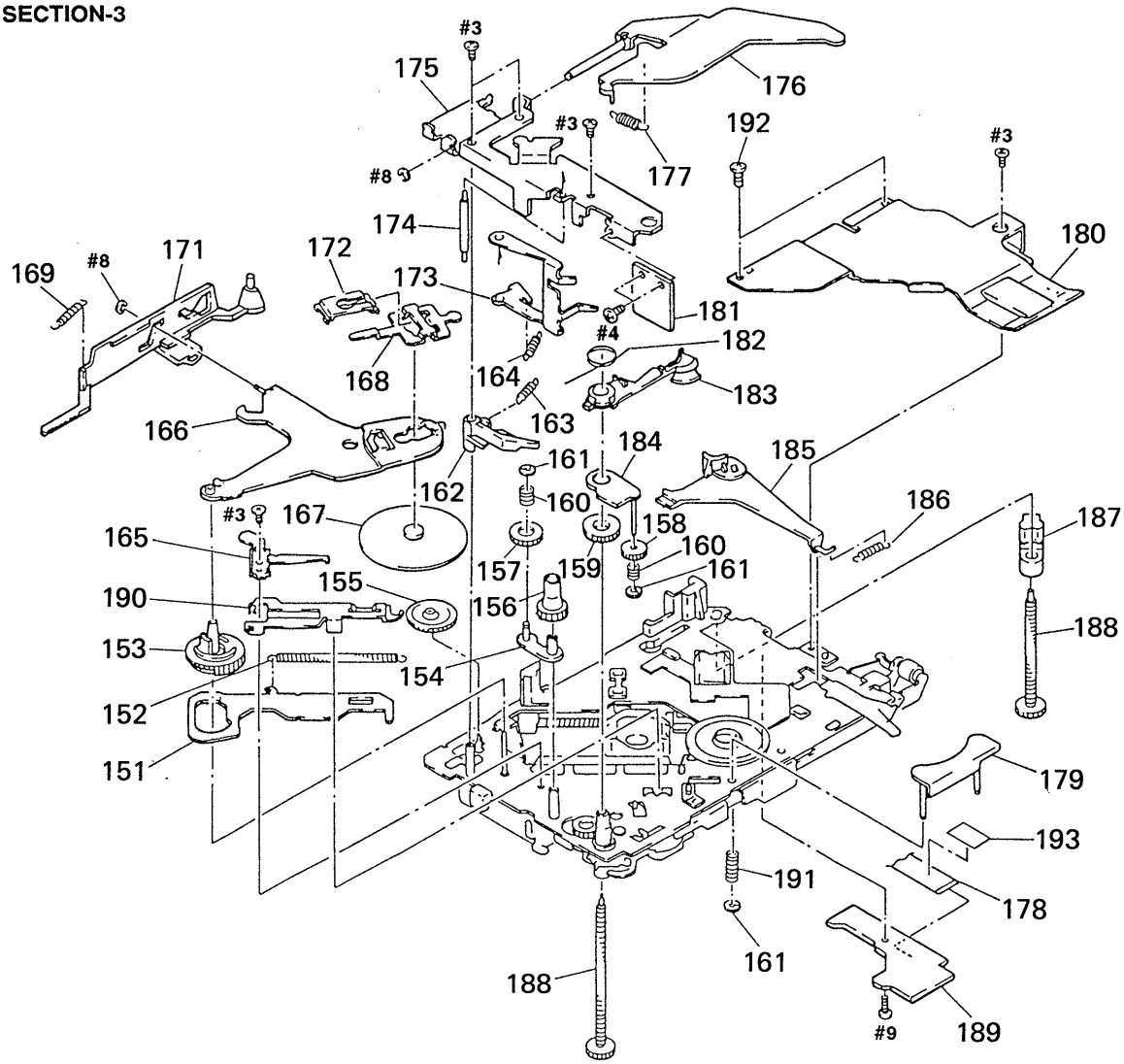
8-3. MD SECTION-2



Ref. No.	Part No.	Description	Remark
101	3-914-069-01	DETENT (SHAFT MS)	
* 102	1-654-844-11	MAGAZINE BOARD	
104	3-914-026-01	DETENT (MOTOR E)	
105	3-914-013-01	GEAR (EL2)	
106	X-3368-452-1	ARM (SELECTION E) ASSY	
107	3-913-987-01	ROLLER (SELECTION E)	
108	3-913-988-01	GEAR (IDLER E)	
109	3-573-936-00	STOPPER, REEL	
110	3-913-996-01	GEAR (SDE)	
111	3-913-989-01	GEAR (EJ), CAM	
112	3-913-997-01	GEAR (SELECTION EL)	
113	3-914-020-01	GEAR (EL1)	
114	X-3368-451-1	ARM (M LOCK) ASSY	
115	3-913-998-01	ARM (SWP)	
116	3-913-999-01	SPRING (TRIGGER E)	
117	3-914-022-01	ARM (TRIGGER E)	
118	X-3368-456-1	LEVER (RELEASE E) ASSY	

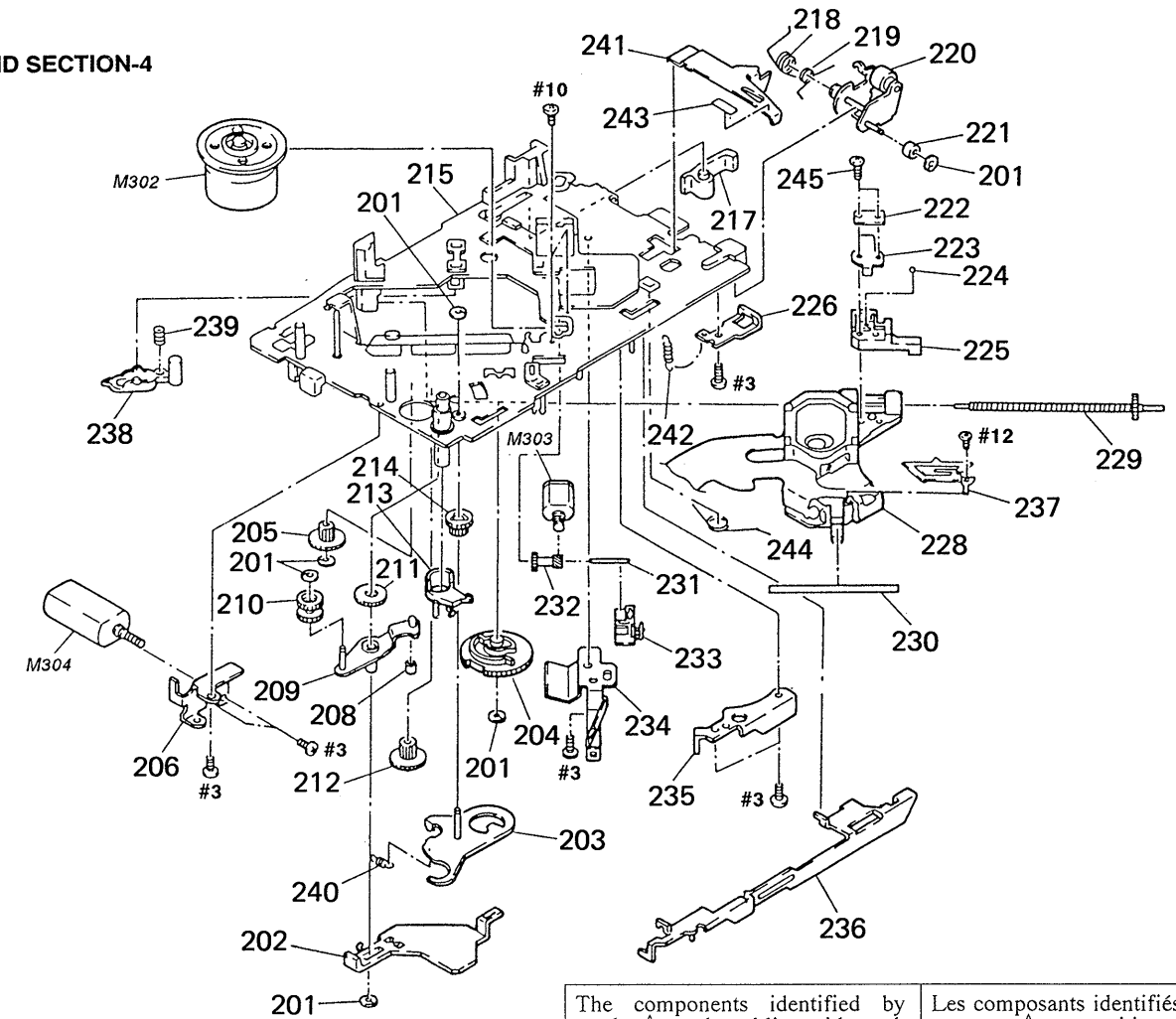
Ref. No.	Part No.	Description	Remark
119	3-914-028-01	SPRING (LEMITER), TENSION	
120	3-913-982-01	ROLLER (ARM M LOCK)	
121	3-913-971-01	ARM (JOINT E)	
123	3-914-010-01	FAN	
124	3-914-000-01	GEAR (EJA)	
125	3-914-077-01	RING (A), RETAINING	
126	3-914-027-01	SPRING (EJ), TENSION	
127	3-913-972-01	LEVER (EJ)	
128	3-914-009-01	GEAR (EJB)	
129	X-3368-453-1	GEAR (IDLER F) ASSY	
130	3-914-068-01	ARM (EJB)	
131	3-914-082-01	SPRING (M STOPPER), TENSION	
132	3-920-790-01	ARM (MGZ STOPPER)	
133	X-3368-454-1	DETEND (M ROLLER A) ASSY	
* 134	X-3368-438-1	CHASSIS (FA) ASSY	
M501	A-3291-196-A	MOTOR ASSY, DRIVING (ELEVATOR)	

8-4. MD SECTION-3



Ref. No.	Part No.	Description	Remark
151	3-914-078-01	LEVER (DISC RETAINER)	
152	3-914-099-01	SPRING (DISC), TENSION	
153	X-3368-445-1	GEAR (C) ASSY, CAM	
154	X-3368-446-1	ARM (C DRIVING GEAR) ASSY	
155	3-914-113-01	GEAR (FL DRIVING A)	
156	3-914-091-01	GEAR (CDAP)	
157	3-914-092-01	GEAR (CDFP)	
158	3-914-098-01	GEAR (TDFP)	
159	3-914-097-01	GEAR (TDAP)	
160	3-914-093-01	SPRING (F), COMPRESSION	
161	3-914-077-01	RING (A), RETAINING	
162	3-914-115-01	PLATE (D HOLD), RELEASE	
163	3-914-116-01	SPRING (R), TENSION	
164	3-913-922-01	SPRING (T RELEASE), TENSION	
165	3-914-085-01	DETENT	
166	X-3368-448-1	ARM (CHUCKING) ASSY	
167	3-914-109-01	PLATE, CHUCK	
168	3-914-111-01	RETAINER (C THRUST)	
169	3-913-920-01	SPRING (T PUSH), TENSION	
171	3-914-112-01	LEVER (T PUSH)	
172	3-914-110-01	SPRING (C. PLATE)	
173	3-913-921-01	ARM (T RELEASE)	
* 174	3-913-914-01	SHAFT (T RELEASE)	
* 175	3-913-918-01	RETAINER (P)	
* 176	X-3368-449-1	RETAINER (C) ASSY	
177	3-913-919-01	SPRING (C), TENSION	
178	1-653-991-11	SENSOR FLEXIBLE BOARD	
* 179	X-3368-444-1	RETAINER (DISC) ASSY	
180	X-3370-069-1	GUID (TRAY) ASSY	
* 181	1-654-845-11	SWITCH BOARD	
182	3-914-118-01	SPRING (D HOLD)	
183	3-914-117-01	ARM (D HOLD)	
184	X-3368-447-1	ARM (T DRIVING GEAR) ASSY	
185	3-913-923-01	NUT (M2)	
186	3-913-924-01	SPRING (NUT), TENSION	
187	3-913-925-01	NUT (M3)	
188	X-3369-62701	SCREW (EL) ASSY, FEED	
* 189	1-654-843-11	SENSOR BOARD	
190	3-914-084-01	ARM (DISC RETAINER)	
191	3-914-076-01	SPRING (DISC), COMPRESSION	
192	2-477-166-21	SCREW (H TYPE), TAPPING	
193	9-911-844-XX	CUSHION, BATTERY	

8-5. MD SECTION-4



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	3-573-936-00	STOPPER, REEL	
202	3-914-056-01	LEVER (SWE)	
* 203	X-3368-442-1	ARM (SAFETY) ASSY	
204	3-914-034-01	GEAR (CTP), CAM	
205	3-914-057-01	GEAR (DRIVING B)	
* 206	3-914-119-01	BRACKET (CM)	
208	3-914-019-01	ROLLER (C/T SELECTION)	
209	X-3368-441-1	ARM (C/T SELECTION) ASSY	
210	3-914-032-01	GEAR (CTAP)	
211	3-914-007-01	GEAR (CTDP)	
212	3-914-033-01	GEAR (DRIVING A)	
213	3-914-035-01	ARM (SAFE CHANGE)	
214	3-914-014-01	GEAR (SDP)	
* 215	X-3368-437-1	OUTSERT (OPT) ASSY	
217	3-914-060-01	ARM (SWC)	
218	3-914-070-01	SPRING (LIMITER FLP)	
219	3-914-049-01	SPRING (FLP)	
220	X-3368-443-1	ARM (FLP) ASSY	
221	3-914-071-01	ROLLER (SHAFT FLKP)	
* 222	3-913-929-01	RETAINER (SL SPRING)	
223	3-913-950-01	DETENT (SL SCREW)	
224	3-920-539-01	BALL (SL)	
225	3-913-949-01	NUT (SL), FEED	

Ref. No.	Part No.	Description	Remark
226	3-914-058-11	RETAINER (FLP)	
⚠228	8-848-319-11	DEVICE, OPTICAL KSS-402A	
229	X-3369-628-1	SCREW (SL) ASSY, FEED	
* 230	3-913-928-01	SHAFT (SL GUIDE)	
* 231	3-913-938-01	SHAFT (GEAR SLB)	
232	3-913-937-01	GEAR (SLB)	
* 233	3-913-942-01	BRACKET (SL FEED SCREW)	
234	3-913-941-01	DETENT (MBS)	
* 235	3-914-080-01	REINFORCEMENT (OPT)	
* 236	X-3368-440-1	LEVER (FLP) ASSY	
237	3-913-951-01	DETENT (SL GUIDE)	
238	3-919-689-01	ARM (DISC UP)	
239	3-914-093-01	SPRING (F), COMPRESSION	
240	3-914-059-01	SPRING (ASH), TENSION	
241	3-922-204-01	DETENT (DH)	
242	3-922-206-01	SPRING (DETENT DH), TENSION	
243	3-922-208-01	SPACER (DH)	
244	3-922-207-01	SPRING (LEVER FLP)	
245	3-920-360-11	SCREW (FRONT PANEL)	
M302	A-3291-038-A	MOTOR ASSY, SPINDLE	
M303	A-3291-040-A	MOTOR ASSY, SLED	
M304	A-3291-196-A	MOTOR ASSY, DRIVING (CHUCKING MOTOR)	

SECTION 9
ELECTRICAL PARTS LIST

MAGAZINE **JACK** **MAIN**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-654-844-11	MAGAZINE BOARD			
		**********			
		< CONNECTOR >			
	CNJ501 1-770-347-21	CONNECTOR, FPC 6P			
*	CNP501 1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
		< TRANSISTOR >			
	Q501 8-729-018-00	PHOTO TRANSISTOR ST-308			
		< SWITCH >			
	SW501 1-571-754-31	SWITCH, PUSH (1 KEY) (MAG SW)			
	SW502 1-571-754-31	SWITCH, PUSH (1 KEY) (POS SW)			
**********					
*	1-654-842-11	JACK BOARD			
		**********			
		< CAPACITOR >			
	C901 1-163-001-11	CERAMIC CHIP	220PF	10%	50V
	C902 1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
	CNJ901 1-770-350-21	CONNECTOR, FPC 13P			
*	CNP901 1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P			
*	CNP902 1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P			
		< FERRITE BEAD >			
	FB901-903				
	1-500-121-21	BEAD, FERRITE (CHIP)			
		< IC LINK >			
	IC901 1-532-686-21	LINK, IC			
**********					

Ref.No.	Part No.	Description			Remark
*	A-3298-398-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
	C11-13				
	1-126-177-11	ELECT	100uF	20%	10V
	C14 1-126-154-11	ELECT	47uF	20%	6.3V
	C15-17				
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
	C18 1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
	C19 1-162-962-11	CERAMIC CHIP	470PF	10%	50V
	C20 1-162-962-11	CERAMIC CHIP	470PF	10%	50V
	C21 1-164-156-11	CERAMIC CHIP	0.1uF		25V
	C22 1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
	C23 1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
	C24 1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
	C25 1-162-927-11	CERAMIC CHIP	100PF	5%	50V
	C26 1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
	C27 1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
	C28-30				
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
	C31 1-126-177-11	ELECT	100uF	20%	10V
	C32 1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
	C33 1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
	C34 1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
	C35 1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
	C36-39				
	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
	C40-44				
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
	C45 1-124-589-11	ELECT	47uF	20%	16V
	C46 1-124-589-11	ELECT	47uF	20%	16V
	C47-52				
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
	C54 1-124-589-11	ELECT	47uF	20%	16V

MAIN

Ref.No.	Part No.	Description		Remark
C55	1-164-505-11	CERAMIC CHIP 2.2uF		16V
C56	1-124-589-11	ELECT 47uF	20%	16V
C57	1-125-701-11	CAP, DOUBLE LAYER 0.047F		
C58	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C59-62				
	1-124-589-11	ELECT 47uF	20%	16V
C63	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C64	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V
C65	1-164-505-11	CERAMIC CHIP 2.2uF		16V
C66	1-164-346-11	CERAMIC CHIP 1uF		16V
C67	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C68	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C69	1-124-360-00	ELECT 1000uF	20%	16V
C71	1-163-001-11	CERAMIC CHIP 220PF	10%	50V
C72	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C90	1-164-156-11	CERAMIC CHIP 0.1uF		25V
C91	1-126-154-11	ELECT 47uF	20%	6.3V
C92	1-126-157-11	ELECT 10uF	20%	16V
C93	1-135-179-21	TANTAL. CHIP 2.2uF	20%	16V
C94	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C95	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C96	1-126-154-11	ELECT 47uF	20%	6.3V
C97	1-164-156-11	CERAMIC CHIP 0.1uF		25V
C98	1-126-154-11	ELECT 47uF	20%	6.3V
C99	1-164-156-11	CERAMIC CHIP 0.1uF		25V
C101	1-126-157-11	ELECT 10uF	20%	16V
C201	1-126-157-11	ELECT 10uF	20%	16V
		< CONNECTOR >		
CNJ11	1-764-438-21	CONNECTOR, FPC 17P		
CNJ12	1-770-349-21	CONNECTOR, FPC 12P		
CNJ13	1-770-347-21	CONNECTOR, FPC 6P		
CNJ14	1-770-346-21	CONNECTOR, FPC 4P		
CNJ15	1-770-350-21	CONNECTOR, FPC 13P		
		< DIODE >		
D12	8-719-210-33	DIODE EC10DS2		
D13	8-719-210-33	DIODE EC10DS2		
D14	8-719-801-78	DIODE 1SS184		
D15	8-719-106-08	DIODE RD6.2M-B2		
D16	8-719-105-99	DIODE RD6.2M-B1		
D17	8-719-038-48	DIODE 1SS319 (TE85R)		
D18	8-719-801-78	DIODE 1SS184		
D19	8-719-105-99	DIODE RD6.2M-B1		
D20	8-719-975-40	DIODE RB411D		
D21	8-719-105-99	DIODE RD6.2M-B1		
D22	8-719-975-40	DIODE RB411D		
D23	8-719-975-40	DIODE RB411D		

Ref.No.	Part No.	Description			Remark
		< IC >			
IC11	8-752-061-08	IC CXA1571N			
IC12	8-752-351-94	IC CXD2515Q			
IC13	8-759-071-79	IC BA6297AFP			
IC14	8-752-863-55	IC CXP84124-024Q			
IC15	8-759-253-82	IC AT24C16N-10SI-TR			
IC16	8-759-327-78	IC TC9404FN-EL			
IC17	8-759-040-83	IC BA6287F			
IC18	8-759-040-83	IC BA6287F			
IC19	8-759-284-87	IC MM1284XFFE			
IC20	8-759-097-36	IC RH5VA40AA			
IC21	8-759-324-40	IC KIA7805PI			
IC22	8-759-054-12	IC PQ09RA1			
		< JUMPER RESISTOR >			
JR11	1-216-296-00	METAL CHIP	0	5%	1/8W
JR12	1-216-296-00	METAL CHIP	0	5%	1/8W
JR13	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COIL >			
L91	1-412-985-31	INDUCTOR	3.3uH		
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR	2SB624-BV345		
Q12	8-729-424-59	TRANSISTOR	UN2212		
Q13	8-729-807-33	TRANSISTOR	2SB1123-R		
Q14	8-729-424-12	TRANSISTOR	UN2112		
Q15	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q16	8-729-016-83	TRANSISTOR	2SB1446		
Q17	8-729-424-59	TRANSISTOR	UN2212		
Q18	8-729-808-01	TRANSISTOR	2SD1622-S		
Q19	8-729-424-12	TRANSISTOR	UN2112		
Q20	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q91	8-729-424-59	TRANSISTOR	UN2212		
Q92	8-729-424-08	TRANSISTOR	UN2111		
Q101	8-729-015-39	TRANSISTOR	DTC323TK		
Q201	8-729-015-39	TRANSISTOR	DTC323TK		
		< RESISTOR >			
R11	1-216-025-00	METAL CHIP	100	5%	1/10W
R12	1-216-049-00	METAL CHIP	1K	5%	1/10W
R13-16					
	1-216-843-11	METAL CHIP	68K	5%	1/16W
R17	1-216-845-11	METAL CHIP	100K	5%	1/16W
R18	1-216-845-11	METAL CHIP	100K	5%	1/16W
R19	1-216-821-11	METAL CHIP	1K	5%	1/16W
R20	1-216-158-00	METAL GLAZE	22	5%	1/8W
R21	1-216-833-11	METAL CHIP	10K	5%	1/16W

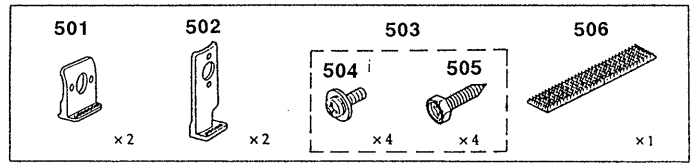
Ref.No.	Part No.	Description			Remark
R22	1-216-835-11	METAL CHIP	15K	5%	1/16W
R23	1-216-835-11	METAL CHIP	15K	5%	1/16W
R24	1-216-834-11	METAL CHIP	12K	5%	1/16W
R25	1-216-833-11	METAL CHIP	10K	5%	1/16W
R26	1-216-833-11	METAL CHIP	10K	5%	1/16W
R27	1-216-845-11	METAL CHIP	100K	5%	1/16W
R28	1-216-833-11	METAL CHIP	10K	5%	1/16W
R29	1-216-839-11	METAL CHIP	33K	5%	1/16W
R30	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R31	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R32	1-216-833-11	METAL CHIP	10K	5%	1/16W
R33	1-216-857-11	METAL CHIP	1M	5%	1/16W
R34	1-216-845-11	METAL CHIP	100K	5%	1/16W
R35	1-216-833-11	METAL CHIP	10K	5%	1/16W
R36	1-216-994-11	METAL GLAZE	13K	5%	1/16W
R37	1-216-839-11	METAL CHIP	33K	5%	1/16W
R38	1-216-837-11	METAL CHIP	22K	5%	1/16W
R39-41					
	1-216-843-11	METAL CHIP	68K	5%	1/16W
R42	1-216-833-11	METAL CHIP	10K	5%	1/16W
R43	1-216-833-11	METAL CHIP	10K	5%	1/16W
R44-53					
	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R54	1-216-833-11	METAL CHIP	10K	5%	1/16W
R55	1-216-073-00	METAL CHIP	10K	5%	1/10W
R56	1-216-033-00	METAL CHIP	220	5%	1/10W
R57	1-216-033-00	METAL CHIP	220	5%	1/10W
R58-60					
	1-216-817-11	METAL CHIP	470	5%	1/16W
R61-65					
	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R66	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R67	1-216-089-00	METAL CHIP	47K	5%	1/10W
R68	1-216-837-11	METAL CHIP	22K	5%	1/16W
R69	1-216-841-11	METAL CHIP	47K	5%	1/16W
R70	1-216-089-00	METAL CHIP	47K	5%	1/10W
R71	1-216-837-11	METAL CHIP	22K	5%	1/16W
R72	1-216-045-00	METAL CHIP	680	5%	1/10W
R73	1-216-841-11	METAL CHIP	47K	5%	1/16W
R74	1-216-841-11	METAL CHIP	47K	5%	1/16W
R81-83					
	1-216-089-00	METAL CHIP	47K	5%	1/10W
R84	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R85	1-216-089-00	METAL CHIP	47K	5%	1/10W
R86	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R87	1-216-073-00	METAL CHIP	10K	5%	1/10W
R88	1-216-049-00	METAL CHIP	1K	5%	1/10W
R89	1-216-077-00	METAL CHIP	15K	5%	1/10W
R91-93					
	1-216-001-00	METAL CHIP	10	5%	1/10W

Ref.No.	Part No.	Description			Remark
R101	1-216-813-11	METAL CHIP	220	5%	1/16W
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W
R201	1-216-813-11	METAL CHIP	220	5%	1/16W
R202	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< VARIABLE RESISTOR >			
RV11	1-241-225-11	RES, ADJ, METAL GRAZE			22K (TRACKING OFF SET)
RV12	1-241-226-21	RES, ADJ, METAL GRAZE			47K (FOCUS BIAS)
		< SWITCH >			
SW11	1-692-682-11	SWITCH, TACTILE (RUBBER) (⏏)			
		< THERMISTOR >			
TH11	1-810-510-21	THERMISTOR NTH5G35A472K01TE			
		< VIBRATOR >			
X11	1-760-479-21	VIBRATOR, CERAMIC (8MHz)			
X12	1-760-241-11	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
	1-654-840-11	EHS FLEXIBLE BOARD			
		**********			
		< DIODE >			
D601	8-719-945-59	LED DSA3A4 (8CM DISC DET)			
		< VARIABLE RESISTOR >			
RV601	1-223-817-11	RES, VAR, SLIDE 10K (ELEVATOR)			
**********					
*	1-654-843-11	SENSOR BOARD			
		**********			
		< CONNECTOR >			
CNJ301	1-770-349-21	CONNECTOR, FPC 12P			
* CNP301	1-580-056-21	PIN, CONNECTOR 3P			
* CNP302	1-580-055-21	PIN, CONNECTOR 2P			
CNP303	1-580-055-21	PIN, CONNECTOR 2P			
CNP304	1-580-055-21	PIN, CONNECTOR 2P			
		< SWITCH >			
SW301	1-571-754-31	SWITCH, PUSH (1 KEY) (LIMIT SW)			
SW302	1-571-754-31	SWITCH, PUSH (1 KEY) (CHUCKING SW)			
**********					

SWITCH

Ref. No.	Part No.	Description	Remark
*	1-654-845-11	SWITCH BOARD	
		**********	
		< SWITCH >	
SW401	1-570-953-11	SWITCH, PUSH (1 KEY) (D. SW)	
SW402	1-570-953-11	SWITCH, PUSH (1 KEY) (E. SW)	
**********			
		MISCELLANEOUS	
		**********	
11	1-769-248-11	CORD (WITH CONNECTOR) (SONY BUS/LINE OUTPUT)	
62	1-655-251-11	JACK FLEXIBLE BOARD	
63	1-655-250-11	MAGAZINE FLEXIBLE BOARD	
178	1-653-991-11	SENSOR FLEXIBLE BOARD	
⚠228	8-848-319-11	DEVICE, OPTICAL KSS-402A	
M302	A-3291-038-A	MOTOR ASSY, SPINDLE	
M303	A-3291-040-A	MOTOR ASSY, SLED	
M304	A-3291-196-A	MOTOR ASSY, DRIVING (CHUCKING MOTOR)	
M501	A-3291-196-A	MOTOR ASSY, DRIVING (ELEVATOR)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-590-519-21	CORD (WITH CONNECTOR) (BUS CABLE)	
	1-765-427-11	CORD, CONNECTION (RCA PIN CORD)	
	3-759-874-11	MANUAL, INSTRUCTION (AEP, UK) (ENGLISH/FRENCH/GERMAN/ITALIAN/DUTCH)	
	3-759-874-21	MANUAL, INSTRUCTION (US, Canadian, E) (ENGLISH/FRENCH/SPANISH/CHINES)	
	3-759-874-41	MANUAL, INSTRUCTION (AEP) (SPANISH/SWEDISH/PORTUGUESE/ DANISH/FINNISH)	
	A-3291-257-A	MAGAZINE ASSY (A)	
**********			

MOUNTING HARDWARE



Ref. No.	Part No.	Description	Remark
* 501	3-919-537-01	BRACKET (HORIZONTAL)	
* 502	3-919-541-01	BRACKET (VERTICAL)	
503	X-3364-512-1	SCREW ASSY	
504	7-682-662-09	SCREW +PSW 4×10	
505	3-302-126-01	SCREW, TAPPING (DIA. 5×20)	
506	NOT SUPPLIED		
		**********	
		HARDWARE LIST	
		**********	
#1	7-621-255-20	SCREW +PTT 2×4 (S)	
#2	7-627-553-27	SCREW, PRECISION +P 2×2.5	
#3	7-627-554-07	SCREW, PRECISION +P 2×2.2	
#4	7-621-255-15	SCREW +B 2×3	
#5	7-624-102-04	STOP RING 1.5, TYPE -E	
#6	7-627-554-08	SCREW, PRECISION +P 2×2.2	
#7	7-624-104-04	STOP RING 2.0, TYPE -E	
#8	7-624-101-04	STOP RING 1.2 (E TYPE)	
#9	7-621-772-38	SCREW +B 2×6	
#10	7-627-552-78	SCREW, PRECISION +P 1.7×3.5	
#11	7-627-852-08	SCREW, PRECISION +P 1.7×2.5	
#12	7-627-850-07	SCREW, PRECISION +P 1.4×2	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

9-959-796-11

Sony Corporation
Mobile Electronics Company

English
95A0294-1
Printed in Japan
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Published by Home A&V Products Div.
Quality Engineering Dept.

CDX-T60

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-1

File this Supplement with the Service Manual.

Subject :
1. CORRECTION
2. CHANGE OF MAIN, JACK, SENSOR, SWITCH AND MAGAZINE BOARDS

(ECN-CS403650)

1. CORRECTION

Correct your service manual as shown below.

EXPLODED VIEWS

Page 35

	Incorrect		Correct	
Ref. No.	Part No.	Description	Part No.	Description
188	X-3369-62701	SCREW (EL) ASSY, FEED	X-3369-627-1	SCREW (EL) ASSY, FEED

9-959-796-82

Sony Corporation
Mobile Electronics Company

English
95B0298-1
Printed in Japan
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Quality Engineering Dept.

2. CHANGE OF MAIN, JACK, SENSOR, SWITCH AND MAGAZINE BOARDS

The main board, jack board, sensor board, switch board and magazine board have been changed.

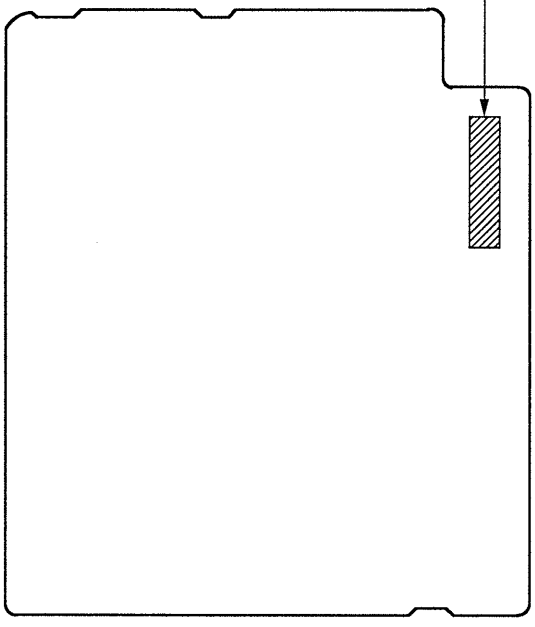
Main section printed wiring boards and schematic diagram of new type, and changed parts list are described in this Supplement-1.

Refer to original service manual previously issued for the other information.

NEW TYPE IDENTIFICATION

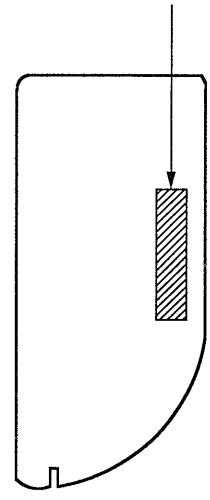
– **MAIN board** (Component Side) –

1-654-841-**12**



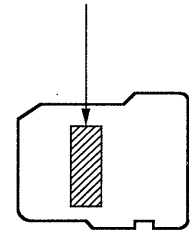
– **JACK board** (Component Side) –

1-654-842-**12**



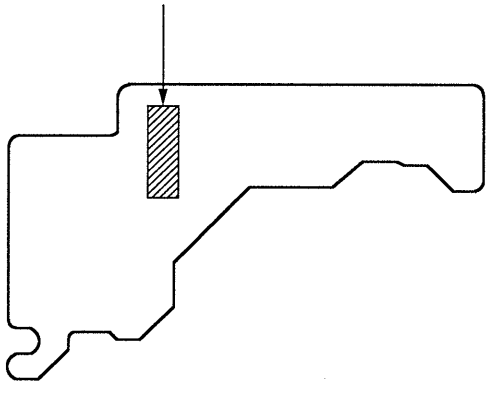
– **SWITCH board** (Conductor Side) –

1-654-845-**12**



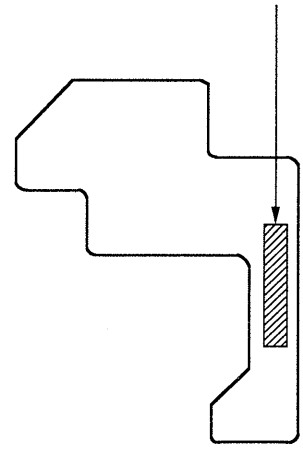
– **SENSOR board** (Conductor Side) –

1-654-843-**12**



– **MAGAZINE board** (Conductor Side)

1-654-844-**12**



CHANGED ELECTRICAL PARTS LIST

JACK

	Former Type		New Type		
Ref. No.	Part No.	Description	Part No.	Description	Remark
C901	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	Changed

MAIN

	Former Type		New Type		
Ref. No.	Part No.	Description	Part No.	Description	Remark
C71	1-163-001-11	CERAMIC CHIP 220PF 10% 50V		————————	Deleted
FB91		————————	1-414-385-11	INDUCTOR FERRITE BEAD	Added
L91	1-412-985-31	INDUCTOR 3.3uH		————————	Deleted

PRINTED WIRING BOARDS

• SEMICONDUCTOR LOCATION

Ref. No.	Location
D12	H - 16
D13	I - 16
D14	H - 15
D15	H - 15
D16	J - 16
D17	I - 15
D18	J - 14
D19	H - 14
D20	G - 14
D21	G - 14
D22	G - 14
D23	G - 14
D601	G - 24
IC11	C - 11
IC12	E - 12
IC13	C - 14
IC14	G - 12
IC15	H - 13
IC16	I - 10
IC17	F - 15
IC18	F - 15
IC19	G - 15
IC20	I - 14
IC21	I - 4
IC22	J - 4
IC901	H - 21
Q11	C - 12
Q12	D - 15
Q13	D - 14
Q14	F - 14
Q15	G - 14
Q16	J - 3
Q17	J - 15
Q18	J - 16
Q19	H - 16
Q20	H - 15
Q91	I - 11
Q92	I - 11
Q101	I - 12
Q201	J - 12
Q501	G - 25

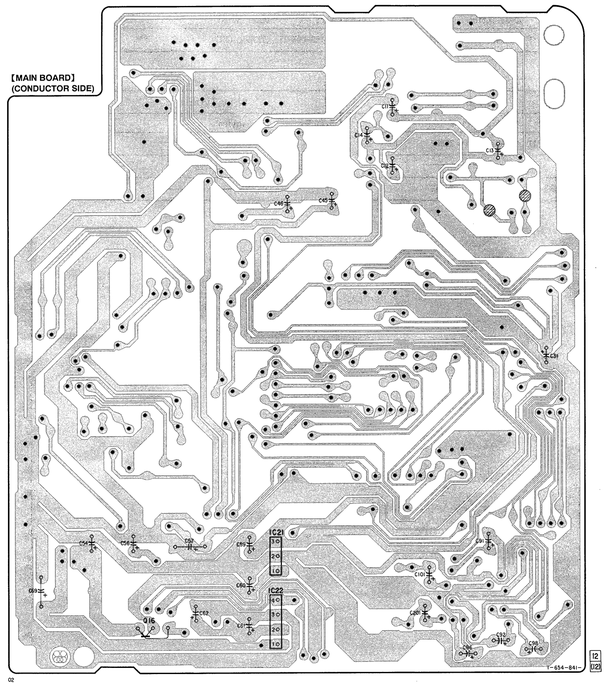
Note:

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)

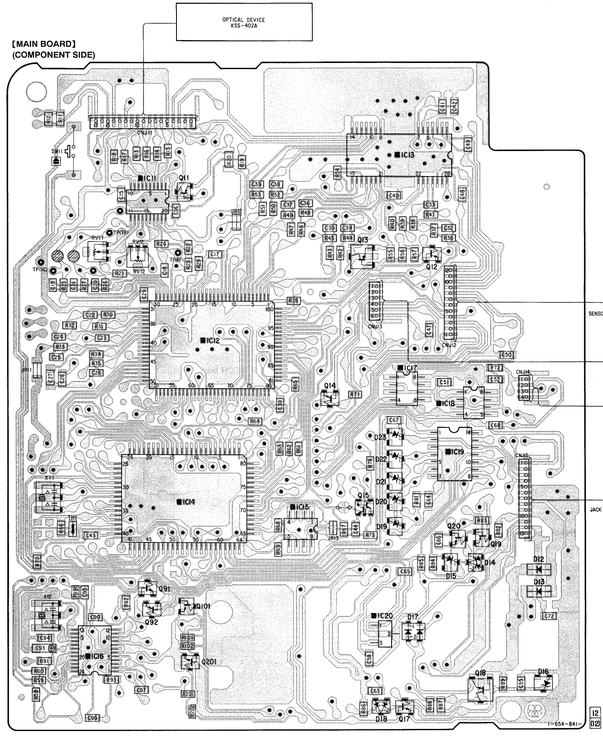
Caution :

Pattern face side : (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side : (Component side) Parts on the parts face side seen from the parts face are indicated.

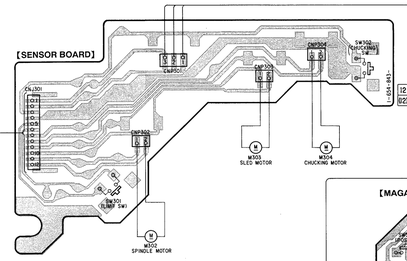
【MAIN BOARD】 (CONDUCTOR SIDE)



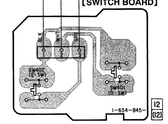
【MAIN BOARD】 (COMPONENT SIDE)



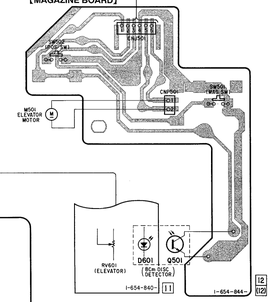
【SENSOR BOARD】



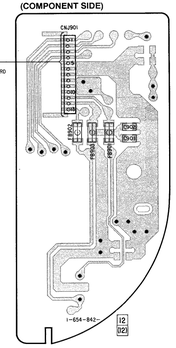
【SWITCH BOARD】



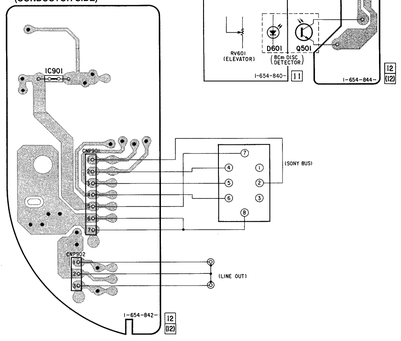
【MAGAZINE BOARD】



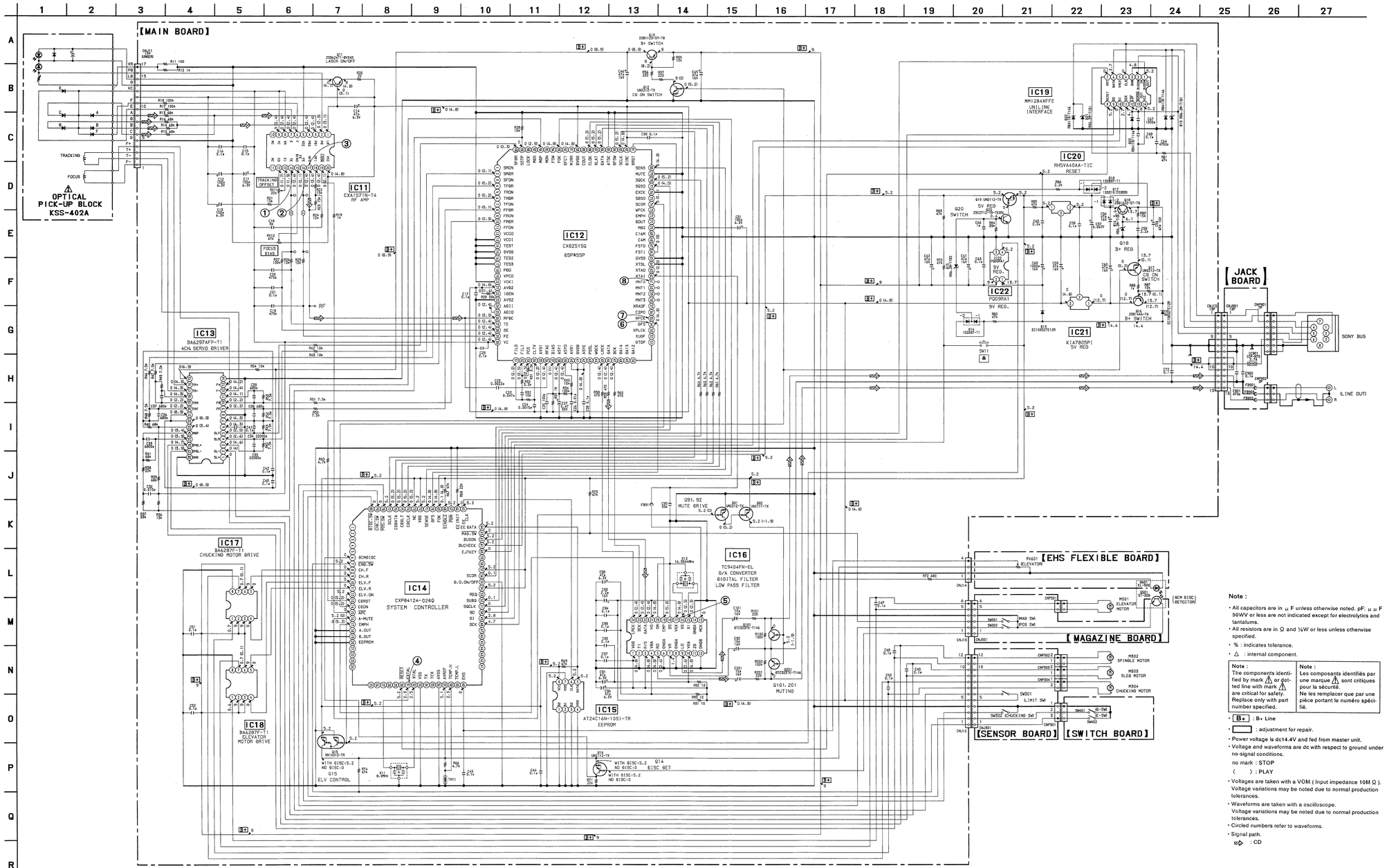
【JACK BOARD】 (COMPONENT SIDE)



【JACK BOARD】 (CONDUCTOR SIDE)



SCHEMATIC DIAGRAM



● WAVEFORMS

① APPROX. 250mVp-p — 2V
IC11 ⑭ PLAY

② APPROX. 600mVp-p — 2V
IC11 ⑯ PLAY

③ 0.9Vp-p
IC11 ⑰ PLAY

④ 4.2Vp-p — 124 µsec
IC14 ㉛

⑤ 4.5Vp-p — 59 µsec
IC16 ⑱

⑥ 4.8Vp-p — 134 µsec
IC12 ㉟

⑦ 5.0Vp-p — 138 µsec
IC12 ㊴

⑧ 4.2Vp-p — 0.059 µsec
IC12 ㊸

Note :
- All capacitors are in µ F unless otherwise noted. pF: µ µ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note :	Note :
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line
- : adjustment for repair.
- Power voltage is dc14.4V and fed from master unit.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : PLAY
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : CD

CDX-T60

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	Ref No.	Part No.	Description	Part No.	Description
39	D601	8-719-945-59	LED DSA3A4 (8CM DISC DET)	8-719-029-26 ☛	LED EL308

(SPM-96006)

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